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EVERYMAN'S PSYCHOLOGY

BY

SIR JOHN ADAMS

1930

DOUBLEDAY, DORAN & COMPANY, INC.

GARDEN CITY

N. Y.

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TO

A. A. A.

MY ALTER EGO

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CONTENTS

PAGE

INTRODUCTION xi

CHAPTER

I PSYCHOLOGISTS MORE OR LESS 1
Are We All Psychologists?—In Quest of a Definition—That Troublesome Term Consciousness

II THE NEW PSYCHOLOGY 13
Why We Call It New—Pseudo-Science and Science—The Behaviourist's Approach—Behaviour and Experience—The Gestalt Theory—Configurations—Physiology and Psychology—The Great Variety of Human Nature—Social Psychology—Unconsciousness as a Basis

III OCCAM'S RAZOR 45
How to Use the Razor—The Use of Metaphors—A Warning

IV THE GREAT MYSTERY 61
Subjective and Objective—The Ego and the Non-Ego—The Split Ego—Personality, Individuality and Character—The Ego Is Bipolar—Introspection as a Method—Our Permanent Guest, the Ego—The Outer World and the Ego—Selfishness

V THE PSYCHIC NETHER REGIONS 86
The Psycho-Analysts—Herbart as a Precursor of Freud—Complexes and Phobias—The Unconscious—Suppressed Desires—The Herbartian View of Ideas—The Laws for Ideas—Herbart's Classification of Ideas—How Ideas Are Recalled—Below the Threshold—Psychic Force—A Typical Psycho-Analyst's Den—Word Association—Idea and Concept Defined

VI THE TWO WORLDS 129
The Inner and the Outer World—The Correspondence of the Two Worlds—Is "Faculty" Psychology Criminal?—About Sensations—Perceptions—Environment and the Psyche

CHAPTER PAGE

VII TEMPERAMENT AND TYPE 149

The Old Humours Classification—Two Kinds of Nervous Temperament—Are Women Sensory or Motor Types?—Bodily Characteristics and Temperament—Fouillée's Classification—Other Attempts to Classify Types—Introverts and Extroverts—Can Temperament Be Modified?

VIII PAID-UP PSYCHIC CAPITAL 175

A Hint from Kant—Habits as Labour-Saving Devices—Habits and Awareness—Psychic Saving and Spending—The "Growing Point"—Creative Work and Knowledge—Can We Think Without Words?

IX MAN THE MACHINE 200

A Letter from Mark Twain—Arnold Bennett on the Human Machine—An Objection to Mechanism—Iron Men and Robots—The Selenium Dog

X ATTENTION, INTEREST, AND BOREDOM 218

The Element of Purpose—Physical Accompaniments—Nisic and Anisic Attention—Interest—Boredom and Fatigue—The Merciless Bore—Borer and Boree—Some Relief Suggestions

XI THE PSYCHIC STEERING GEAR 248

What Is the Will?—Various Angles on the Will—Free Will?

XII SUGGESTION, HOME AND FOREIGN 266

Laws of Association—Auto-Suggestion and Coué—The Psychology of Selling—Suggestion and Literary Art—The Psychology of Temptation—Suggestion and Education

XIII INTERNAL HARMONY 289

Four Laws of Thought—Deduction and Induction—Reconciling Our Concepts—Recruiting and Drilling Our Thoughts—The Phrenometer—The Flash—The Goal of Thinking

XIV LOOKING BEFORE AND AFTER 321

The Workings of Memory—Mnemonic Aids—Former Criticism of the Imagination—The Case of Fairy Tales—The Artistic Imagination—Scientific Imagination—Image Explained

CHAPTER PAGE

XV RUDDERLESS EXPERIENCE 347

Freud's Wish Theory—The Censor—Daydreams—Appreciation and Reverie

XVI EMOTIONS: PSYCHIC OVERFLOW 365

The "Boiling-over" Theory—The Lange-James Theory—On Regulating the Emotions—The Lists of Descartes and McDougall—Instincts and Emotions

XVII DEMOS 390

Our Imitative Nature—When Crowd Psychology Occurs—The Atomic Psyche—Social Molecules—Crowds—The Force of Imitation—The Individual and the Crowd—The Demagogue—Psychology of the Jury—International Psychology

INDEX 421

INTRODUCTION

COMMON HONESTY demands that a book of this kind should have a descriptive title to warn off people who want a totally different psychology from that presented here; and it has struck me that it would not be a bad way of introducing this volume to talk over in an unceremonious way the various titles that have passed through my mind, and my reasons for finally adopting what you find on the title page.

I have long had the inclination to write on psychology in a less solemn strain than convention seems to demand. The science itself is interesting enough, and occasionally a genius like William James has the courage to make it interesting in print, though he himself suffered just a trifle in reputation among his less intelligent readers because he was so deplorably clear that even they could see at once what his pages meant. Time was, and that not so long ago, when psychology held a rather precarious place among the sciences. Perhaps at that time a little elaboration of terminology might be pardoned as a means of self-defense. There is sound sense in the advice of the old Scotch professor of divinity who used to say to his class of young men just leaving the university to take up their life work as clergymen: "Noo, lads, tak' my advice, and preach aince a year—aince a year, and nae oftener—a sermon that naebody in the congregation can understand."

But psychology has now got past the stage at which tricks of this kind are necessary to bolster up its reputation. Secret societies used to have quite a formidable array of mysterious words and signs—all the more awesome under their Latin name of *arcana*—and certain academic subjects have an equivalent supply of sesquipedalian words that used to be thought useful in inspiring respect among the outsiders. But *arcana* are no longer needed in psychology. Indeed the honest teacher of this subject finds one of his chief difficulties to be in making clear to his pupils the exact meaning of the enormous list of technical words that make up an essential part of his teaching vocabulary. With most of these terms the ordinary public have nothing whatever to do, any more than they have with the complicated apparatus and laboratory appliances to be found in the rooms where modern psychology does its research work. The actual things done in dissecting rooms and chemical laboratories are no concern of the ordinary citizen, though no doubt none of us is so ordinary as not to have an interest in the ultimate results of the researches carried on in these mysterious places.

In all deep studies there is a more or less clearly marked off body of people who have made the subject their own, and who therefore speak of all other people as outsiders, or, when they do not wish to be rude, *laymen.* Since this book makes its appeal to just these laymen it might reasonably be entitled *The Layman's Psychology;* only unfortunately one particularly powerful group of men have used the word so prominently that it has acquired a very special meaning. This powerful organization is of course the church, and so familiar is the contrast between the churchman and the layman that any use of the term laymen would suggest that the book was intended in some way to eliminate clergymen from its circle of readers, whereas in reality clergymen are likely to benefit specially from what we have to say on the subject. So our first hopeful title must go into the discard.

In many erudite subjects we not only have a body of specialists who regard all outsiders as laymen, but within that body we have two groups, an inner and an outer. The members of the first group are called *esoterics,* and the second *exoterics.* The innermost circle is made up of the select few who know the most profound depths of their subject; they make up a kind of holy of holies. The exoterics are a sort of good journeymen specialists who know the subject thoroughly in what may be called a professional way that raises them far above the common herd of outsiders, without admitting them to the innermost secrets. The word herd came quite naturally to my pen, and thus without my thinking of it brings out the attitude of the specialists toward the outsiders. In a famous sentence Horace tells us that he despises the vulgar crowd and does his best to ward them off. His attitude is too often imitated by the esoterics toward the exoterics, and in a much more marked way by the joint esoterics and exoterics toward the general public.

The readers of this book will naturally wonder where they are placed in this classification. Have they any standing in psychological circles? Suppose we figure the Temple of Psychology as made up of two courts. In the inner of these the select band of esoterics find their home. The outer court is crowded with people who have a distinct interest in the subject and know something about it—but in many cases not much. The word used above, crowded, is deliberately and justifiably used; for the general public is now flocking in. Everybody wants to know what is going on there. We do not find the public lining up to get peeps into dissecting rooms or chemical laboratories. Why then this pressure at the gates of the outer court of psychology? The answer is because what psychology deals with is *ourselves,* and there is nowhere in the universe a subject in which we are quite so much interested. As we shall see more fully later, psychology may be regarded in a general way as a somewhat systematic study of human nature, and is therefore a very suitable subject for general consideration. In fact, one of Pope's lines has become almost indecently threadbare, because it has been so often quoted in defense of just this position. In reading the line,

The proper study of mankind is man

note the significance of the definite article. It unobtrusively picks out psychology as the primary study for mankind. We might in fact have adopted for our title the phrase *Proper Studies,* for these words would indicate just the sort of thing we have in view. To be sure, the title would have been a little vague, which is for us the less to be regretted because this title has been already appropriated by Aldous Huxley for a book of essays. It is obvious that he relies upon his public to know their Pope, and therefore to guess the nature of the essays.

From what has gone before, some of my readers may suggest that *Outer Court Psychology* might make not a bad title. But this implies that people who saw the name in a book list would know exactly what it meant. They might take quite a wrong meaning, besides, as the arresting policeman in story books warns the culprit, "it may be used against you." For clever disagreeable people might be tempted to say with a sneer that this cheerful treatment of the subject ought to be called *Out-of-Court Psychology.*

Still worse is the suggestion *Exoteric Psychology.* Certainly this represents exactly what the book deals with. But can you imagine an intelligent member of the public, interested in human nature and wanting to know more about it, turning to a book with a title like that? It would suggest to him just the sort of thing that this book is out to avoid. I want to set out in the least stilted way the truths of psychology that may enable us to understand ourselves and others better than we would do without it.

An impatient reader may here interrupt: Why not call it *The Easy Psychology,* and have done with it? But this naïve suggestion has too much of the schoolboy about it. One might as well go a step farther and make it *Psychology without Tears.* Besides, it isn't so dead easy as all that.

A friend has suggested *A Plain Man's Psychology* with the alternative *Psychology for the Man in the Street.* But I put it to you: would anyone like to be caught reading a book with a title like that? The plain man does not exist in the first or second person singular; he has to content himself with the third person. He exists only to be talked about. He never appears in the flesh. You and I can oscillate easily between the first and second person with an occasional drop into the third when our friends or our enemies discuss us. But the plain man has no other function than to be talked about. It is true that there is a type of man who is fond of claiming with some emphasis that he is "a plain man." But you will find on examination that such men are spiritually diseased. They do not mean what they say. Only those claim to be plain men who have a deep-rooted conviction that they are nothing of the kind. As to the man in the street, he is even more mythical. I have never heard anyone claim that epithet.

A more promising title is *A Plain Psychology*. This is not so offensive but it is rather misleading. Archbishop Whately complained that his young clergy sometimes made the mistake of thinking that when he recommended them to use plain language to their flocks he meant unadorned language. Naturally, the archbishop knew that unlettered people are remarkably strong in the matter of figurative speech. It is not a matter of culture but of native capacity. Humanity as a whole loves metaphors. So in the following pages there is no justification for the adjective *plain,* if it means *literal* and *unfigurative*. In fact, a mischievous critic may turn up somewhere and tell us that the book ought to have been called *Metaphorical Psychology,* or perhaps more accurately *Psychology by Metaphor*. I do not know that I should greatly object, for there is certainly a good foundation for the charge. Metaphors abound throughout the text. Figures of speech are certainly interesting and may be so used as to make matters *plain* in the sense of being easily understood.

Underlying all this is the problem of terminology. My policy in this matter is to take no technical term for granted, but to explain what it is here taken to mean. However well-up in this subject the reader may be, he will probably not resent this clarifying process, for it will at least save him the trouble of guessing: "Now what does *this* fellow understand by *involuntary attention, suggestion,* or *anoetic experience?*" I should like to be able to guarantee that in the text there will be no tiresome discussion of the meaning of well-known terms. But certain of these have got into such a tangle that it is dangerous to use them at all unless we make it quite clear both what they do and what they do not mean. In some cases, indeed, I find myself in the humiliating position of having to invent new terms of my own, in order to avoid confusion. It certainly seems a questionable way to simplify complications by introducing new elements. But it really is the simplest way out of some situations, and it is always well to seek out what is really the simplest way, rather than rest content with what *seems* the simplest.

It has to be noted that the difficulty of a subject does not arise so much from the technical terms used as from the general attitude toward the subject. Many philosophical books are all but unintelligible and yet use very few such terms. In some cases it may not be amiss to say that their obscurity arises from the lack of technical terms. We shall accordingly not shun technicalities but seek clearness by making plain what underlies them. We want to present the essentials with the minimum amount of pomp and circumstance. But we must take care that wherever we have to be technical our readers will be supplied with sufficient explanations. Nobody likes to be talked down to, but on the other hand no one worth considering wants to be talked to in language he does not understand. Pope and Mark Twain between them have put the matter in such a way as will cover both sides of the question. Says Pope:

Men must be taught as though we taught them not,
And things unknown proposed as things forgot.

Mark Twain's apposite remark was that people who quoted Greek to him paid him a compliment by assuming that he knew that language, but if they gave him the translation instead he could worry along without the compliment. I shall have the less compunction in explaining technical terms as they occur because I know from experience that even among themselves professional psychologists are continually calling upon each other to explain what each means exactly by this term or that.

It is now time to have another title for consideration. The suggestion was seriously made to me that *Non-Examinational Psychology* might not inaptly describe the sort of thing I am after. Certainly I had no thought of the examiner in my mind in writing the book, and the aspirant after high grades at university tests will find many more acceptable books than this. Yet even students with an examination looming before them may find it a bit of a fillip to go through the pages of a book that has not once allowed the shadow of an examiner to darken its pages. For the time has come when even examiners are inclined to look with some sort of satisfaction on presentations of psychology that are somewhat unconventional. But in any case we cannot accept the offered title, since it is purely negative. A prospective reader is entitled to know what a book does do, and rightly resents being fobbed off with a hint of what it does not do.

A fair title would be *Applied Psychology,* but there are already in the field a good many books claiming to come under this name, so the title would prove somewhat vague. Our present purpose might be better described under the title *Applicable Psychology,* for it would suggest that what is here presented may be applied in a great variety of different ways, and therefore will prove of advantage to almost everyone, since by its elasticity it can be made to fit into all manner of different circumstances and conditions. *Undifferentiated Psychology* conveys the same idea in a more chilly form. In a way this suggests just the opposite of *Applied Psychology,* since it signifies psychology in general, without reference to any differences among its readers whether of race, sex, culture, social status, or occupation. This indeed suggests just the sort of book that is being put before the present reader. So it may not unreasonably be asked what sort of reader the writer has in view.

The answer is, an intelligent man or woman, educated, but not of necessity academically educated in the technical sense of that term, gifted with plenty of mother wit, and above all endowed with a genuine interest in human beings. My friend Director E. C. Moore, of the University of California at Los Angeles, has a consuming interest in and love of "folks." He is continually thinking about, and talking of, "folks." On all manner of public occasions he calls the attention of his audiences to the claims of "folks" on their attention and regard. People who share in this interest in and love of humanity are those to whom this book appeals. The range is naturally a wide one. Leaving out of account the small minority of misanthropes and disgruntled social misfits, it includes the whole of humanity. So a natural title may be found in a modern revival of an old way of speaking: why not call the book *Everyman's Psychology?*

Why not, indeed? My only answer is a strictly personal one. In my early professional days I fell in love with a title that at the time I did not dare to use. I early found that in psychology one must be decorously dull. I wanted to write under this secret title of mine, but I knew that it would be banned by publishers and frowned upon by professors and university appointment committees. So when I had a book ready for the press I suppressed my cherished private title, and suggested *Herbart for the General.* But my publishers objected on the ground that it was too cheerful, if not indeed frivolous. It was pointed out to me that in the Southern States of the U. S. many people would want to know why not *Herbart for the Colonel,* or even *For the Captain?* So the book made its appearance under the devastatingly flattening title: *The Herbartian Psychology Applied to Education.* Events have proved that my publishers were right, for the public prised their way through the forbidding title and have apparently found the inside attractive enough to keep on reading.

I had a vague notion of calling this present book *Psychology for the General,* but I suppose the Kentucky colonels would be as jealous as ever. So I fell back on my well-beloved secret title, brought forth and tentatively presented it to my present publishers for their consideration. But when it appeared before them in all its simplicity, *Psychology with the Chill Off,* it was gently but firmly turned down. I had thought that what would not be permitted to a young man might be allowed to an old one, and that one of the advantages of being emeritus is that one may take certain liberties with one's public.

At the very time in these old days when I gloated in secret over my hopeless title, Mr. Hume Robertson published an admirable translation of a Latin classic under the title of *Horace in Homespun.* In Robertson's pages Horace is none the less a classic though his work appears in what Scotsmen are fond of calling "the doric," by which they mean "braid Scots." So psychology is none the less a useful science, though it should make its appearance without the frills to which it is accustomed in academic circles. My only fear in suggesting the "chill off" title was that I myself have become so accustomed to the shades of the university prison house that I may not have dissipated the chill as effectively as I had hoped. In any case I accept the title

Everyman's Psychology. I am told that it is more respectful to the professional psychologists, though I can kiss the Book and swear that my secret and rejected title contained not an atom of disrespect to anyone, much less to my professional colleagues.

This printed "wake" that I am holding over my dear departed title arises in some measure from my genuine regret, but it has a definite reference to the reader of the text. He cannot but note a frequent reference to such things as *chill, chilled, chilly.* These are sad little souvenirs of the late lamented title, and might be unintelligible apart from this explanation. I am in hopes that the chill of the more severely academic presentation has been to some extent overcome, and that the subject has been presented in a friendly human way. In view of this explanation I trust the reader will accept in the spirit in which they are offered, my attempts to thaw out the below-zero conditions under which the subject is often presented. On first reading omit Chapter II.

Had Socrates done us the honour of publishing his own dialogues instead of leaving that work to his distinguished disciple, Plato, he might well have selected for the title of his book, *Everyman's Philosophy,* for that represents exactly what his life work produced. It is customary to give him the credit of bringing philosophy from the clouds to the market place. Cold shivers of modesty run down my spine as I realize how near I have come to drawing a parallel between myself and Socrates. But I am saved by the fact that no one can now undertake to do for psychology what Socrates did for philosophy: for the excellent reason that that work has already been done. No individual can claim credit for this work; it has been accomplished by coöperative effort—the most potent joint influences being the daily and weekly newspapers, the monthly magazines, the itinerant lecturers. Psychology is now acclimatized in the market place, and only the humble work remains to deal faithfully with the market place psychology, brace it, keep it up to standard, and at the same time bring down from the clouds, from time to time, as much of the psychological material there as is fit for the use of Everyman.

EVERYMAN'S PSYCHOLOGY

CHAPTER I

PSYCHOLOGISTS MORE OR LESS

Are We all Psychologists?—In Quest of a Definition—That Troublesome Term Consciousness

In the midst of a heated discussion among some young teachers on the question whether psychology formed an essential part of the training for their profession, a wise old schoolmaster threw in the remark: "But we are all psychologists more or less." This widened the field, and the problem came to be whether a training in psychology did not form an essential part of preparation for life in general. Perhaps some have a greater need for it than others, and maybe teachers have a special claim for its help. Many professions have already taken possession of some science and made it their very own. Navigators have appropriated astronomy, clergymen have an unchallenged claim on theology, physiology is practically in the hands of the doctors, botany has been doubtfully annexed by horticulturalists and agriculturalists. Engineers have a lien on mechanics, and mining experts have practically made geology their own. As an enthusiastic young lecturer on education, I urged my students to follow the general example and capture a science. The obvious application was to lay hands upon psychology, and to do the teachers justice the capture has been effected. Had it not been for the demands of the teachers, chairs in this subject would not have been so common in our universities, and progress in it would have been much less rapid.

Now we are faced with a demand for the extension of the applications of the science, and the remark of our old schoolmaster raises what has become a practical question. Teachers can no longer insist on a monopoly of psychology. It is not merely that other professions claim an equal share in its benefits —lawyers, doctors, clergymen, politicians, novelists, salesmen, actors, are loud in their demands—but that the general public insist upon their quota.

About the middle of the Nineteenth Century it was fashionable to talk and write about the philosophy of this and that. Books and articles were written under such titles as *The Philosophy of Sleep,* of *Love,* of *Clothes,* of *Hunting,* of *Success,* of *Voting,* of *Househunting,* of *Thimblerigging.* To-day the same sort of thing is treated in much the same way with the difference of substituting *Psychology* for *Philosophy.* In truth, many of these subjects come more naturally under the heading *Psychology.* After all, this subject began its career as a branch of philosophy, and its development has taken a direction toward the practical. Philosophy has a bias toward the contemplative and the abstract. Psychology, on the other hand, tends to deal with human nature, and though it too has a bent toward abstraction it has a closer connection with human affairs. This is shown by the change in form of the modern popular appeal. We still use the caption *The Psychology of So-and-So,* but the more common form now is "Psychology for": *Psychology for Clergymen,* for *Novelists,* for *Auctioneers,* for *Medical Men,* for *Congressmen,* for *Librarians,* for *Actors,* for *Realtors,* for *Salesmen,* for *Policemen,* for *Advertisers,* and, of course, for *Teachers.*

ARE WE ALL PSYCHOLOGISTS?

It may be hinted by critics that the list is quite incomplete, with the effect of making us aware that we are drifting back to the old schoolmaster's "more or less." Are we then to accept the position that we are all psychologists? I do not remember having yet seen a work on *Psychology for the Plain Man.* But it is clear that we are on the very brink of such a book. There is evidently a place for it, for whether or not we are all psychologists we all deal with the subject matter of psychology. It is only an affair of words, but for clear thinking it is well to realize that though we all deal with human nature, which is the matter that psychology treats, we are not necessarily psychologists. The essential difference is the attitude we adopt toward the subject matter. Unless we deliberately and systematically study human nature in a somewhat scientific way we had better not claim to be psychologists, either more or less.

Sir J. M. Barrie has unconsciously supplied a useful illustration of our thesis. The amazing success of his *Window in Thrums* and his *Auld Licht Idylls* stimulated some ambitious young clergymen to seek success in the same line by studying in minute detail the quaint personalities they found among their parishioners. In almost all cases their literary results were failures. These young men were really psychologists, and the results of their studies had no literary value, though they might have supplied excellent data for psychological research. Barrie, on the other hand, was an artist, not a psychologist. We can imagine him being intensely bored if called upon to deal with his own subject matter from a purely psychological point of view. When we read a book on *Shakespeare as Psychologist* we feel that if the divine William could join in with us in reading he would be as much surprised as we. He was no psychologist, though he deals sublimely with psychological subject matter. He provides admirable matter for psychologists to treat after the approved manner of their cult, but he did not write psychology.

Out of all this there arises in the reader's mind a certain indignant reaction. Some may say: If Shakespeare and Barrie are not psychologists who in the world are? But these authors owe their glory to the very fact that they do not write psychologically. For it is possible to write fiction psychologically. We are familiar with what is known as the psychological novel. Henry James supplies an example, and everybody is familiar with the quip, soothing to readers who find Henry dull, that William James should have written novels and Henry should have written psychology. The truth is that a novel writer may be really a psychologist, but the popular verdict is usually that he would have made a better appeal had he thought more of his art and kept his psychology in the background.

All this difference of opinion brings out clearly the need of adopting a more elastic attitude toward the use of the term *psychologist.* We are all practical psychologists, for not only do we deal with the subject matter of psychology but often deal with it in a psychological way. Many people who have seldom heard the word, and certainly cannot spell it, are interested in psychological matters. The child who knows the exact set of conditions under which he (or more probably she) may ask a paternal favour with the maximum hope of success is a practical psychologist; but the Red Indian medicine man who has reduced to a fine art the process of manipulating his tribe to the best advantage is more than a merely practical psychologist. If we could talk to him on equal terms we would, no doubt, find that he had a group of generalizations at his disposal that in effect would amount to a primitive scheme of psychology.

Popular opinion is entirely on the side of the old "more or less" schoolmaster. For psychology is in the air, and everybody is talking of it. Psychological terms are getting into common use, and off the lips of bright ordinary people, who have no psychological standing at all, come trippingly such terms as *complex, psychological moment, I. Q., phobia* and *moron.* It is true that they are frequently used incorrectly. Often psychological terms are employed for everyday social purposes. For example, *moron,* which signifies a person of extremely low intelligence, is found particularly convenient to describe anyone we do not like. The newspapers join in and brighten their pages by an enlarged if not always accurate vocabulary. Plain old-fashioned doctors are getting a little irritated at the way their patients talk knowingly about the psychological effects of bright-coloured mixtures compared with those of a more subdued hue. Society clergymen find it necessary to look up their old college notes in order to keep abreast of their anxious inquirers, and those notes are not always found to meet the case, since modern readers approach the subject from a very different angle from that of the academic writers of a quarter of a century ago. Psychology is in the air and in most of the higher-browed monthly magazines, and cannot be ignored

What then is psychology? For we have to face this difficulty at last. No longer can we lightly refer to the matter as known to everybody, and therefore not needing definition. This taking-for-granted policy may be, and is, followed by the man in the street, by the newspaper man, and by the mezzo-brows of society. But in a book under our title there is no escape: we must come to some sort of understanding regarding what we are dealing with. There is certainly no difficulty in getting material to choose from. It is not definitions that lack. The real trouble is that there are so many of them. We are embarrassed with riches and do not know which to choose. The compensation is that with this exuberant choice we are sure to find one that will meet our needs. We want a definition that will indicate a study that can be carried on by the intelligent, if plain, man. (But for the sinister adjective "plain" the words "or woman" should have concluded this last sentence.) This is a peaceable book and seeks to get at the truth without giving offense to anyone. All the available definitions must be kept in view and treated respectfully. Probably the line of least annoyance will be followed if we fall back on the good old-fashioned way of the teachers of my boyhood and begin with the etymology of the term.

IN QUEST OF A DEFINITION

My old teacher would have begun by pointing out that psychology comes from two Greek words, *psyche,* meaning the *soul,* and *logos,* meaning a great many tiresome things, among them being, according to him, "a mode of treatment of any subject of thought." At the end of his disquisition I have no doubt we would have written in our notebooks something like: "Psychology is the study of the soul," and we might have done a great deal worse. To be sure this would have been only an introductory lesson in the case of my old master, who was far too good a teacher to let matters rest there. A future lesson would without doubt have raised the further question: What is the soul? Here etymology was not so complaisant as to supply a decisive answer, and as my master had a strong bent toward theology we were in for a rather severe bout of hard thinking, from which the reader has every reason to claim to be excused. The important point brought out by this lapse into theology is that the word *soul* carries with it a certain religious atmosphere that is incongruous with the study of psychology. No doubt the theologian must take account of psychology, and very serious account, for it is of the essence of his studies. We have only to turn to such works as Dr. Steven's *Psychology of the Christian Soul,* Prof. James Stalker's *Psychology of Religion,* and Prof. Starbuck's work under the same title to see what scope psychology finds in this sphere. But if we adopt the word *soul* as an essential element in the definition of psychology we are limiting its scope unduly and suggesting continually to the general reader an atmosphere that is not essential to the idea of the science. Besides, those of a religious turn of mind and familiar with religious literature would resent the habitual use of the term *soul* in connections that are very far from religion.

If you were to stop an intelligent man in the street, one who is well read in the newspapers and the lighter magazines, and ask him what he understood by psychology, the chances are all in favour of his saying something about *mind:* "the study of the mind," or "the science that deals with the mind." Among the many definitions of the subject are to be found quite a number that would justify the man in the street's offhand answer. There is no doubt that the term *mind* is often used in a loose general way to include the whole of the non-material part of man's nature. Many people use it carelessly as a synonym of *soul.* But it is distinguished at once from *soul* by the lack of that religious atmosphere that we have noted. Besides, it not only lacks the atmosphere of *soul,* but it has an atmosphere of its own; as *soul* has usually a religious background, so *mind* has usually an intellectual one. *Mind* is ordinarily correlated with thinking, and therefore covers only one part of the area for which psychology makes itself responsible. Still, the example of many writers on psychology justifies the plain man in his indiscriminate use of the term, making it cover all the non-material part of man. This is well illustrated by a habit that is growing among psychological writers of using a compound word to represent the subject matter of their science.

The material and the non-material part of man have been in the past very clearly separated from one another; in fact so sharply marked off that a protest was felt necessary by no less a person than Montaigne, who warned us that we do not educate "a mind or a body, but a man." Psychologists of to-day are realizing the danger of too clear cut a division, and some of them are adopting the somewhat clumsy, but quite effective, plan of always using a compound word to represent what they know to be a compound entity. They do not speak of body and mind separately but in all connections speak of body-mind or mind-body. Up till now they do not seem to discriminate between the two forms, but it might not be a bad convention to use *body-mind* when the emphasis is on the material aspect and *mind-body* when it is on the non-material. In any case, the reason for this compound making its appearance here is the fact that the word *mind* is selected to represent the non-material side. In spite of this support given to mind as the general subject of psychology, it will be better to retain the term for the limited area covered by the intellectual aspect of the non-material side of man. By thus restricting its use we shall gain a definite term for one aspect of soul activity. In what follows we shall use *mind* and its corresponding adjective *mental* with strict reference to the thinking functions, the intellectual aspects.

The reference to the adjective *mental* brings up an additional argument against the use of the term *soul* to indicate the opposite of body as subject matter in psychology. We have no adjective in English to correspond to *soul*. *Bodily* forms a quite satisfactory adjective for the one term of the body-and-soul combination; for *soul* there is no adjectival correlate.

Soul and *mind* having gone by the board, a third hopeful candidate presents itself in the form of *spirit*. This time there is no lack of an adjective, but curiously enough the adjective turns out to be a disadvantage rather than an advantage. To the word *spirit* no serious objection need be raised. But to the adjective *spiritual* there has got attached a special meaning that does not make it popular. Body and spirit make a very comfortable combination, but *spiritual* has become associated with a special theory of the relation between body and spirit called *Spiritualism,* and with this, psychology does not want to be specifically identified. No doubt Spiritualism, whether we like it or not, forms a legitimate part of the subject matter of which psychology must take account, but it covers only a part of the field, and its name must not be accepted as covering the whole.

Spirit having followed *soul* and *mind* into the discard, there remains only one presentable candidate for the vacant place—and that one none too presentable, especially in view of the title of this book. It does not seem quite the right way of going about reducing the chill of psychology to fall back upon a Greek word to indicate its subject matter. Besides, the Greek word in question has a somewhat unprepossessing outward appearance. *Psyche* rather repels us with its superfluous *p*. Many people are not quite sure what to do with that unfortunate letter of the alphabet. If, like the cat, as sized up by the poet, it is "necessary," it may also claim the poet's other epithet "harmless." As it is here proposed to adopt this word as the non-material correlate of *body* let us do the best we can for it. Let us ignore the initial *p* and call the word plain *siké,* or, if doubt of the pronunciation still lingers, *sigh'-ky.* There are conscientious people who seem always in doubt whether the *p* should not have some say in the matter and begin the word with a timorous suggestion of the *p*-sound, then cut it short, lay considerable stress on the *sigh,* and end gently on the unobtrusive *-ky.* The same is true about the word *psychology* itself. Common usage justifies the complete dropping of the initial *p,* and if the phoneticians have any serious objections let them state them now and supply an authoritative decision or forever after hold their peace.

Fortunately there is a suitable adjective at our disposal here, but again it has a rather exotic air. However, the newspapers, aided and abetted by the Society for Psychical Research, have familiarized the public with the term *psychic.* People will even ask of one another in the sanctity of a dinner table: "Are you psychic?" and that apparently without sinning against the social code. I hear hints that there is a distinction between *psychic* and *psychical,* and the name of the Society is sometimes quoted to illustrate the difference. But the distinction is not generally recognized, and cannot therefore cause any serious misunderstanding. We may accordingly adopt boldly the shorter form *psychic* and treat it without further ceremony as the adjective corresponding to the noun *psyche*. Henceforth we shall use *body* and *psyche* as the equivalents of the material and the non-material aspects of the human being, and *bodily* and *psychic* as the corresponding adjectives.

It is with a rueful look that we regard the definition to which we have thus been led: *Psychology is the study of the psyche.* Somehow it does not seem to mark any sensible advance in the process of taking the chill off the subject. There is, besides, a taint of repetition about the definition, and we have a vague memory of one of the laws of definition that forbids the inclusion of the term defined in the definition adopted. But what we have been pursuing has not been really a logical definition so much as a definition of terms that may be used accurately to describe the matters that have to be treated. Before we get very far in the book I am in hopes that we may hit upon a definition more in keeping with our general title, but in the meantime our discussion of terms will help in presenting the fundamental problem.

For the moment we begin to examine this psyche that we have agreed to make the subject of our treatment here, we find that we cannot separate it from the body. The mind-body compound of the newer psychologists really proclaims the acceptance of the doctrine that neither body nor mind has an independent existence. When the psyche departs what is left is not what it was while the partnership lasted. When a living man talks about his body he means something quite different from what the undertaker deals with. If you ask the psychologist: What about the soul when it is separated from the body? he blandly refers you to your clergyman. For the psychologist the psyche is always in a body.

THAT TROUBLESOME TERM CONSCIOUSNESS

The relation between the psyche and the body is certainly a psychological problem, though we can study the psyche by itself and the body by itself. But it is easier to study the body than the soul. In ordinary speech the study of the body is called physiology, while psychology is usually understood as the study of the psyche as distinct from the body. We used to be asked in college examinations to distinguish between a physiological fact and a psychological fact, and the orthodox answer was that the first did not necessarily imply *consciousness* and the second did. Now the colleges are not so sure. This phenomenon called *consciousness* has now come to be very troublesome. We cannot explain what it is. We cannot even define it. We try by saying that it is a knowing and a knowing that we know. But when we go deeper into the matter we find that it seems to go farther back than that and implies a knowing that we know that we know. Ingenious writers can carry us still farther afield and show us that consciousness implies an infinite regression. Others come along and want to know why we confine it to mere knowing. Must it not also imply a feeling and a knowing that we feel, a willing and a knowing that we will? We shall have to look at this reciprocal activity again in another connection, but in the meantime we may note that some psychologists try to muffle this curious simultaneity of experiences by cutting down the word *consciousness* itself, and reducing it to mere *sciousness*. This lopping off of the prefix *con* is at best an admission of the existence of the problem of internal interaction: it is in no sense a solution.

Others cut the knot by saying bluntly that there is no such infinite regression as is suggested, that consciousness is mere awareness. When we are aware we are conscious, when we are not aware we are not conscious, and that is all there is about it. But this is merely explaining a term by giving an equivalent. Sometimes it is helpful to supply merely a synonym. A little boy who does not know the meaning of *courage* may break into a smile of intelligence when you tell him that it means *bravery*.

But a man who does not know the meaning of consciousness is not greatly enlightened when he is told that it means merely awareness. In point of fact there is nobody who does not know the meaning of consciousness, though it is equally true that there is no one who is able to tell categorically what consciousness is. The most illiterate yokel knows exactly what you mean when you tell him that he was unconscious after his fall from the hayrick. It is one of those primary things that can come to us only by experience.

So troublesome is this mysterious experience that certain psychologists are tempted to deny its existence altogether and thus get rid of the plague once and for all. Half a century ago T. H. Huxley told us bluntly that he had no use for the consciousness. It was only an interfering busybody that kept poking its nose into our inner life, without having any authority there. We can get on exceedingly well without it, and in fact all the better if it would stop buzzing around where it has no standing; for, according to Huxley, the consciousness has no more to do with the conduct of our lives than the steam whistle has to do with the motion of the locomotive. It is hard to meet criticisms of this kind, since we cannot by any possibility expose for inspection either our own consciousness or anybody else's consciousness. Yet we know quite well that we have consciousness and that Huxley had it too, though he chose to look down upon it and treat it as a sort of internal poor relation.

Life and consciousness are inseparably associated in the popular mind, because most of us, when we think of the subject at all, are inclined to regard life as the sort of thing we have ourselves, and with us it is always associated with consciousness. As we shall see in Chapter III we humans have an almost ineradicable habit of embodying our thoughts in things. We like to be able to have some definite object to bring before the mind, even if we are thinking of what cannot be thus turned into an object. So when we think of consciousness we are inclined to give it a more definite form. A physiologist in probing through the body is in search of consciousness, but the old Greek philosophers sought for the psyche. They were not particularly successful in locating the psyche, but it was not for want of trying. They hunted all through the body and suggested various places as the probable seat of the psyche. Some of these old philosophers, for example, placed the psyche in the arteries. When on the battle field they saw the gaping empty arteries from which the blood had ebbed away, they thought they had found a very likely home for the vital force which they not unnaturally associated with air, since they connected it with the dying agonies during which the last breath passed out of the body.

Other sites that have been suggested are the heart, the lungs, and even the liver. With more reason the brain has been suggested as the general abode of the psyche, while Descartes became more definite still and traced the psyche to its ultimate lair in the pineal gland. His reason for this final allocation was probably the solitary position of that little gland about the middle of the lower brain, where it hangs like a tiny cherry on a stalk and differs from the other organs of the brain by being single and not duplicated like the rest.

But while we read with interest of these early hunts after the psyche we have an uneasy feeling that we are on the wrong tack. There has been aroused in our minds a more formidable problem in the form of this consciousness that we found to be so troublesome, and that quite obviously threatens still further worry. To one who, like myself, has been brought up on the working hypothesis that psychology is the science of consciousness, there is something eerie in the very suggestion that this is not so. It is all very good to say that we should never meet trouble halfway, but when trouble takes the form of assaulting the basis of our thinking it cannot well be put aside for a more convenient season. We can make no further progress in our subject till we have cleared up this fundamental mess. So our next chapter must be given over to the defense of consciousness.

CHAPTER II

THE NEW PSYCHOLOGY

Why We Call It New—Pseudo-Science and Science—The Behaviourist's Approach—Behaviour and Experience—The Gestalt Theory—Configurations—Physiology and Psychology—The Great Variety of Human Nature—Social Psychology—Unconsciousness as a Basis

It may seem premature to introduce to the new psychology readers whom one has no right to assume to be familiar with the old. But this is the age of newness. If we are to believe the popular press and to take seriously the ordinary conversations heard in the street, the restaurant, and the trolley car, we are living in an age of rejuvenation. Everything is being examined, tested, and usually found wanting to such an extent that it has to be put in the melting pot and remoulded altogether. On the physical side this newness is represented by the myriad inventions that have filled the world with things that have never appeared before. But on the non-material side, the side that deals with thought and its applications, we have the same spirit working out new ways of treating old subjects. We have the new theology (a quarrelsome matter), the new art (if possible more quarrelsome), the new poetry, the new criticism, the new journalism, the new education. The renovation does not limit itself to processes; it extends to persons. The new woman is a portent all by herself; the other day I picked up a big book with the title *The New Negro,* and my friend Mrs. Radice has completed the circuit with her book on *The New Children*. It is true that critical people sometimes question whether there is anything really new underlying these epithets. They remind us of the saying attributed to Talleyrand that the more certain things change the more they are the same.

Probably the truth is to be found in the demand of each new generation to have a fresh presentation of subjects to meet its special needs. The great classics, for example, require to have a different translation to make the proper appeal to the new swarms of readers that Nature is incessantly throwing upon the world's book market. Compare, for example, the various translations of Homer into English. They differ radically from each other in form and in tone: Chapman, Pope, Derby, Butcher and Lang. They all make a different presentation, and yet, in spite of the criticism of Pope's disagreeable friend, all the translations "are Homer." Even the Bible itself has to vary its presentation from time to time, though here religious conservatism makes change less welcome than elsewhere. There is always a preference for the archaic in religious presentations, whether material or literary. Yet even here the new generation in America want an up-to-date presentation of religious history. Mr. Bruce Barton in his popular book describing Christ under the title of *The Man Nobody Knows* gives a picture that might well be called *The New Christ*. For this tall, burly he-man has nothing (physically at any rate) in common with the Christ with whom our reading has familiarized us. The very fact that Mr. Barton gives Our Lord blue eyes demonstrates the fact that we are here dealing with an Americanized Christ. His teaching, however, remains unchanged.

WHY WE CALL IT NEW

So with the other cases where the adjective *new* has been applied. Accordingly, in presenting any of the subjects thus labelled it is not an unwise thing to begin with the new presentation, since it naturally embodies that aspect of the subject that makes the most effective appeal to the generation to whom the presentation is made. But before we actually come to the new psychology it may be well to deal a little with another subject that has a very direct bearing on psychology, especially in its new form. It is not a bad idea in any case to leapfrog into an unknown subject over the back of another subject that is better known. Comparatively few people know much about psychology. But the schools see to it—thanks to medical and health boards—that everybody knows a good deal about physiology. If, then, there be a new physiology that is surely an excellent point from which to start.

Unfortunately, it is not customary to speak of the new physiology, which is very remarkable, since this subject in the past and at the present day has a higher percentage of change than has almost any other. There is, however, a certain department of physiology, and that most closely connected with psychology, that has thrown up a new phrase that gives us at any rate some sort of justification in speaking of the new physiology.

In my student days our physiological lecturers laid great stress on the two parts of the brain. These were clearly distinguished from one another as upper and lower. As was right and proper the upper brain had the more important and dignified function. To it belonged all those activities that involved consciousness. To the lower brain was left the responsibility of carrying on all those activities that are continually going on in the body, but of which we are unaware. Here at the very start we stumble against a distinction that is of fundamental importance in the struggle that is going on among modern psychologists. When it is said that we are unaware of certain processes that are going on in the body, we are speaking in a special sense. From my textbooks I learned about a great number of things going on in my body of which I was, and am, totally unaware. For example, I know that at this moment myriads of red blood corpuscles are moving up and down certain vessels in my arm. I have never seen any of the corpuscles at present capering along my veins and arteries. My last acquaintance with my own corpuscles was made under the microscope some forty-five years ago. All the same, I am quite convinced that their successors are, as I write, disporting themselves in the good old-fashioned way. I am aware of them not directly but at second hand. Keep this in view for reference when we come to treat of the great bugbear of a certain group of psychologists, that is, the much debated consciousness.

In the less sophisticated days of my studenthood we were told definitely that certain processes began in the upper brain and that therefore we were conscious of them; but that by and by when we got more skilful in these processes we had less and less to rely upon consciousness, and finally after a time we reached a stage at which consciousness was not called in at all to aid in these processes.

When we turn to the newest textbooks on physiology we do not find anything contradictory to all this. The good joint brain seems to be carrying on business on the old lines, the upper and lower partners keeping to the old-established relations. But for some reason or other the firm seems to have changed its name, for the two parts of the brain have now acquired new titles. At any rate, a German physiologist of high standing, a certain L. Edinger, calls our old lower brain by the daunting name of *palæ-encephalon.* To be sure, when the Greek has been squeezed out of the word the English residuum is merely *old-brain.* Naturally we turn to the label on the upper brain, and find it reads *ne-encephalon.* Passing this in turn through our sifter we find left behind the term *new-brain.* Naturally we want to know how one part of our brain can be older than another, and Edinger obliges us by explaining that he is speaking in terms of evolution. Though in the case of the individual person the two parts of the brain come into existence at practically the same time, in the history of the evolution of the various types of animals the parts corresponding to our lower brain appeared in the world long before there were in existence any traces of the sort of brain that we call the upper. (It may be remarked in passing that the word "practically" used in the last sentence was inserted because in the development of the individual brain the lower part may be said to have just a little start of the upper, since in the development of the body as a whole there is said to be a recapitulation, on a small scale, of the evolution of the race.) There is a grim point to be noted in the fact that the first appearance of the new-brain occurs among the sharks.

This introduction of the term *new-brain* brings physiology into line with the other clamourers for novelty. The reason why the physiologists have made no claim to the adjective *new* is probably that, since their science is changing all the time, novelty has no special attraction for them. Indeed if physiology is ever in need of a patron saint it could not do better than choose the philosopher Heraclitus, who won his fame by elaborating a thesis that exactly fits the needs of the physiologist. This runs: All things flow; nothing stands still; nothing *is* but everything is *becoming.*

When we come to psychology, everything is changed. There is a very real demand to be recognized as something new. We have a body of newer psychologists who are out on the warpath against the very foundational principle of their seniors. It is not, of course, a matter of age, but of point of view, and these belligerent new psychologists are not in the least doubt about what they believe and what they deny. They know exactly what they want and are quite clear about the way they propose to attain it. There is a lion in their path; they want that lion killed and decently buried. This lion is Consciousness, and they have the grave all nicely arranged for him. But before preparations are made for the funeral it would be well that the carcass should be duly produced. The creature not being actually dead, we cannot have a post-mortem, but there is nothing to hinder us having a comfortable ante-mortem.

The tale is told with much gusto in American smokerooms and Pullman cars of a raw countryman, a rube, who made his first acquaintance with a giraffe in an itinerant menagerie that visited his small town. He examined the creature from all points of view, but went away without making any comment. By and by, however, curiosity drew him back for further inspection; and again he left without saying anything. But when the attraction of the monster had drawn him back for a third inspection, his emotion found expression in the words: "Hell! There ain't no setch animal!"

PSEUDO-SCIENCE AND SCIENCE

This would almost seem to parallel the experience of some of our modern psychologists in relation to consciousness. They may not go quite the length of denying the existence of consciousness, but it looks as if they would very much like to. Somehow it does not fit into their scheme of things, and is continually turning up in the most awkward way, interfering with the smooth working of their scientific methods. For it is the scientific spirit of these newer psychologists that is hurt by this upsetting consciousness. They are inclined to regard it as a sort of vestigial remnant of the human make-up, like the appendix and other troublesome and useless relics of prehistoric stages of evolution. These new psychologists want to do their psychologizing decently and in order—in other words scientifically. But this irritating thing called consciousness persists in thrusting its oar in and causing disturbance in an otherwise well-organized environment. By this interference the science of psychology gets into trouble with the other sciences, since it cannot follow all the rules of the scientific game, and the would-be scientific psychologists feel hurt and ashamed at their inability to join in with the others on equal terms. Accordingly, they invite the old-fashioned psychologists to drop all this consciousness business and behave like decent, ordinary, respectable scientists.

Formerly psychology got into trouble with the recognized scientists because of the newness of this study of the consciousness. Psychology was, and was called, a new science. Indeed it had to pass through a period when it had to rank with what were called the pseudo-sciences. Time was when it ranked only a little higher than phrenology. Many people still living can remember the time when for thirty-five cents one could buy a plaster cast phrenological head with a book of the words thrown in. This head was adorned with a swarm of tiny blue labels indicating certain qualities whose abiding place in the human anatomy was supposed to be found just under the label. Ideality had its local habitation in the eye-socket somewhere, philoprogenitiveness (which the explanatory book considerately explained meant "love of offspring") was seated, if my memory does not deceive me—which very probably it does—somewhere at the back of the head, and appropriately not far from amativeness, which was not unnaturally perhaps the most popular of the "bumps" among the sort of people who trusted the little blue labels. The only bump of whose location I am absolutely sure is destructiveness, which is placed just behind the ear, as was frequently pointed out to me by those whose property suffered from my boyish activities.

Most people to-day, without doubt, have given up the hopes that phrenology once aroused. Few indeed can now believe in this pseudo-science. But a great many people would like to. Naturally, psychologists have little sympathy with those who have even a desire to believe. For, after all, the two groups of students of mind, the phrenologists and the psychologists, approach their subject from quite different standpoints, the phrenologists finding the bumps outside and the psychologists finding their data within. Indeed I am not sure that my psychological friends will forgive me for even mentioning them and the phrenologists in the same paragraph. But I am relying upon the soothing effects of the lapse of time. The astronomers have forgiven the astrologers long ago, and the chemists of to-day harbour no rancour against the alchemists.

But the fact that psychology has now thrown off all traces of the pseudo-science stage makes it perhaps all the more trying for the newer "scientific" school to tolerate this remnant of the supra-scientific atmosphere involved in the recognition of the consciousness. We cannot deal with the consciousness as we can with all the other phenomena that science takes in hand, and these vigorous new psychologists resent the peculiar position in which they are placed. Accordingly, they call upon their orthodox colleagues to drop all these special claims and join the scientific fraternity on equal terms. But the majority of professional psychologists do not see their way to scrap consciousness in the interests of simplicity. They admit that their work might run a good deal more smoothly if this very obstreperous element were eliminated, but they mildly suggest that the very troublesomeness of this recalcitrant element is a proof of its importance, and they slyly ask if it is quite a good specimen of scientific procedure to eliminate an element because it is troublesome.

It cannot be denied, however, that the newer psychologists have a good deal to say for themselves. They maintain that this unruly member, this consciousness, does not play the scientific game, since it will not submit to that "control" that is so essential to a true scientific process. Consciousness is a purely private matter and cannot be tested from without. Each individual is the only authority with regard to what goes on in his own consciousness. The scientist may draw his own conclusions from the report made by the individual in question, he may make certain allowances, deduct a little from the statement at one point, add a little at another, and in this way draw certain conclusions about what has happened in the psyche of the individual in question. A result not far from the truth may be attained by those who have a definite psychological feeling, a flair or intuitive appreciation of how things strike the other fellow. But in the last resort the total result is an induction; it is not a first-hand fact; it is not a scientific datum.

Accordingly, the newer psychologists are pressing for such a treatment of their subject as shall enable them to rank on equal terms with their really scientific fellow researchers. Not only do they want to reconstruct the study; they actually want to rebaptize it. Psychology is to visit the palace of Euthanasia and be seen no more, while the expectant scientific public will be on hand at the other side of the building to welcome the new Science of Behaviour, or, if you prefer it, the Science of the Behaviour of Organisms. We are not told what is to happen to consciousness during that passage through the palace, but it is made abundantly evident that it does not emerge along with the brilliant new science. Behaviourism, as the shortened form of the new science runs, has no longer any trouble with this erratic obstruction. All its material can now be reduced to decent order, conclusions can be drawn as definitely as in any of the other natural sciences, and all is to go well.

THE BEHAVIOURIST'S APPROACH

But the unconvinced and unrepentant orthodox psychologist harks back to the palace, and after the manner of the knight-errant rescues the imprisoned consciousness. He cannot do without her; she is a part of his life itself; the very trouble she arouses in his thinking only makes her the more dear to him.

The behaviourists certainly do excellent work, and they do it in a very effective and businesslike way. But they have gained their freedom in an illegitimate fashion. To take her by main force and imprison her, even in a palace, is no way to treat a lady. Imprisoned ladies, like truth and murder, will out. As a matter of fact she has never really been in. Consciousness has been brooding over the behaviourist all the while he has been glorying in his freedom. He has been able to deal with actions in a thoroughly satisfactory way. But beyond these actions there have been things going on of which he has taken no notice. He can apply his measurements of all kinds to the open actions, but he has no means of testing or appreciating what has been going on behind the scenes. So far as animals are concerned no fault can be found with the behaviourist. He has used all the means at his disposal; what more could he do? But when it comes to us humans he has not the same blameless record. Even here, to do him justice, there is a region in which he can claim immunity. So far as children before the speaking period are concerned, he has an absolutely clean sheet, and no serious fault can be found with him even at the earlier period during which though the child can speak he is not able to express himself as fully and as clearly as a psychologist would like. But when we come to adult humanity the behaviourist cannot claim that he has done all he can to get at the truth. The orthodox psychologists maintain that at this stage we have two ways of getting at the truth of what happens in human experience.

We can observe from without the activities of the person we are studying. We can note what he does and the effects he produces on the material he is working on or among, and we do not fail to note changes in his own appearance and attitude. We can apply all sorts of measurements and physical tests to estimate the nature of the results he is producing, and in this way we get a register of the quantitative and qualitative outcome of the man's activity, both on the objects on which he reacts and upon himself, so far as physical characteristics are concerned. A German psychologist, Kurt Koffka, not a behaviourist, in a work called *The Growth of the Mind,* takes the illustration of a woodchopper at work. We note that as his operation proceeds there is a gradual change in the amount of work done in a given time. The number of chips he produces in the first quarter of an hour is considerably greater than the number produced in, say, the twelfth quarter of an hour. We find also that the man's attitude has changed, and we say that he is tired. But we do not really know that he is tired; he may be merely bored. The only way that we can know that he is tired is by his telling us. All the outside things we can find out for ourselves, and we can find means of estimating them quantitatively, but being tired is a state of the man's inner nature; it is a part of his experience, and into other people's experience we cannot penetrate. As Huxley once told his students, the only way to find out how a crayfish feels is to be a crayfish.

My wife has a curious way of classifying musical conductors. She uses a scale of collars. A certain well-known conductor she classifies as a one-collar man, another equally well known is a three-collar man. Some are two-collar men, but up till now none has reached the four-collar standard. When one learns that the basis of comparison is the number of collars the conductor goes through in the course of an evening's concert, one can gather that the three-collar man will probably exhibit a good deal more energy than the one-collar man—though in point of fact the one-collar man may have expended quite as much nervous energy as his three-collar rival. In order to understand completely the whole situation of the incident of the concert we would need to have not only the observation of the collar reaction, and many other outside and measurable elements, but a statement of the experience of the conductor contributed by himself. The behaviourist would have to rest content with the collar series and all that could be put on the same plane with them.

No doubt the behaviourist might complain that he could make an exceedingly good guess at the state of mind of each of the conductors by observing their conduct throughout the progress of the concert, and it is not worth our while to try to deny him the satisfaction of proving himself a good interpreter of the symptoms provided by the conductor's behaviour. But in that case would it not be becoming for the behaviourist to say a little less about the scientific attitude on which he is wont to lay such stress. The experience of the conductor is as much a fact as is the number of collars he needs to remain respectable throughout the performance, and this experience forms as essential a part of the whole situation as do the more obvious items of his behaviour.

We have here a contrast between actions and experiences. The first can be noted, compared, contrasted, measured; the second remain forever shut up in the breast of the person concerned. No doubt he may express to us in words the nature of his experience, and if he is a good expositor, and we are intelligent listeners, we may be able to realize exactly what that experience was, and then add it to the other elements that are necessary to explain the situation that we are studying. Even here there is room for error, but not nearly to the same extent as in the case where the behaviourist sets about interpreting, as well as he can, the experience as suggested by the subject's conduct. Often a man appears to be calm, and yet is in a state of acute psychic tribulation. Not infrequently a man has all the outward symptoms of being worn out, and yet within is quite fresh and ready for work. In Chapter XVI we shall go into the matter in more detail, but in the meantime it is enough to point out that outward behaviour is by no means a safe guide to internal states.

But let us be genial and grant to the behaviourist the power of coming very near the truth in his interpretation of the experience underlying certain lines of behaviour. To tell the truth, this is making no great concession, for many of the behaviourists have shown remarkable acumen in this process of interpretation. But when every possible concession has been made there remains the devastating fact that the behaviourist is in the position of clamouring for the full rigour of the scientific game and yet coolly rejecting pieces of evidence that are of the very essence of his problem. No doubt the behaviourist may come back at us with the complaint that the evidence of the *subject* (this is the usual term in psychology for the person under observation) with regard to his experience is sometimes unreliable, and to this protest we can only reply by conceding the point. But the concession in no way relieves the behaviourist of the responsibility of dealing with the facts of the experience. Let it be admitted that it is very difficult to reach the truth about experience (the possible dishonesty of the subject certainly increases the complications), but surely the difficulty in obtaining a certain piece of evidence is no justification for a man of science to neglect it.

The behaviourist is impatient of the methods popular among those that he calls the old-fashioned school. He maintains that there is no such thing as *inner perception,* and that what is called *introspection* is really an impossible process. That these methods of turning the psyche back upon itself in order to examine itself are difficult no one will deny, and in the chapter that deals with this aspect we grant in the frankest way the serious difficulty of the process. Indeed the very title of the chapter, "The Great Mystery," conveys in the most vivid way the conception of the enormous difficulty underlying the analysis of experience. But even if we cannot explain experience, and have to treat it as a mystery, we are not entitled to dismiss it as irrelevant.

Koffka points out that the fatigue of the woodchopper is the woodchopper's own affair and does not depend on the opinion of the onlooker. In real life we sometimes come across an unwarrantable abuse of outside opinion in such matters. In old-fashioned days when domestic servants were under the heel of their mistresses, sometimes a maid would complain that she was tired, only to be met with the retort, "You're nothing of the kind; you only think you are." Now this attitude would not be in the least justified even if we have an instrument—as we have—whose business it is to test fatigue. This instrument is called the *ergograph*—which means literally, *work measurer*—and is an adaptation of an instrument invented by Helmholz for measuring the work of the muscles, and called by him a *myograph.* By means of the ergograph the potential amount of work a person can do at a given moment can be estimated, and when this is compared with the normal amount of work the subject can do his degree of fatigue at the moment is obtained. But this result may not coincide with the experience of the subject. He may feel quite fresh and ready to go on with his work, or to undertake some new form of work. No doubt the machine is in a way right; the person is physiologically fatigued, though for some reason his spirit is good, and he is able to go on.

BEHAVIOUR AND EXPERIENCE

We have probably all had an experience that the psychologists of the more cheerful type describe in the unchilled terms "mental second wind." Your usual time for going to bed is, say, eleven o'clock. But to-night you have a piece of work that simply must be finished and mailed by the three o'clock morning post. When eleven comes you feel sleepy and your body clamours for bed. But you take a cup of strong coffee and go on with your work. The drowsiness continues for maybe a quarter of an hour, but then the brain clears, and you can work on quite comfortably for several hours, and, what is rather remarkable, your work usually stands the test of "next morning." In other words, it is normal good work turned out under abnormal conditions. For you really are physiologically tired, and the ergograph would tell you so. But your experience gives a different account of the state of affairs. Here obviously the behaviourist and the ordinary psychologist would give different accounts of the affair. The truth seems to be that when the usual time of retirement comes Nature issues her ordinary intimation that the time for rest has come. But being bludgeoned by coffee and conscience (on the professional side), she lets the thing go along on normal lines, knowing that the body has such reserves that an occasional overdraught like this does no real harm. This was unintentionally but very clearly proved during the World War, when over and over again men were called upon to keep on working beyond the normal limits of strength. Naturally there is an ultimate limit beyond which we may not go. At this final stage the reserve of energy is exhausted, Nature gives her last warning, neglect of which means real collapse.

This reference to the war suggests illustrations that are very disconcerting to the behaviourists. During these ghastly years we were having daily illustrations of the absolute lack of ordinary correlation between behaviour and experience. From the conduct of the men and their officers it was in most cases quite impossible to make any true correlation with their experience. Nothing but the evidence of the persons concerned would give any just idea of what the combatants experienced as they did their duty in the trenches. An observer could watch them "going over the top" and have very little idea of what was going on in their minds. Were it not for the confessions of the fighters themselves after the horrors were over, few would believe how often the second lieutenant gallantly leading his men to almost certain death was in what he called afterward "a blue funk." The bravest men were the most willing to admit in their breezy slang that they "had the wind up."

Wise men know that we must not take good soldiers too seriously when they speak of their emotions during an engagement. Of course those who talk a great deal on this subject become rightly suspect; when they explain their fears they certainly "protest too much." But sober, kindly, taciturn men who wear their medals in a cupboard at home, when they do happen to talk on the subject are almost unanimous in their confession of their fear when they thought of the matter at all. In point of fact most of them maintain that they were so busily engaged in the work that lay immediately before them that they had no time to observe emotions of any kind. It is interesting to note how many people who have gone through very exciting experiences have no definite memory of how they felt. There was no opportunity for introspection, even if there had been the inclination.

The orthodox psychologists at this point are prepared to make a concession to the behaviourists. Instead of speaking of introspection or inner perception they are willing to use the term *experiential observation,* but they ask the behaviourists to admit in their turn that there is such a thing as consciousness, and that its operations are of consequence in estimating the nature and function of the psyche.

To do them justice there are not many of the behaviourists who deny the actual existence of consciousness. Their trouble is more in the manipulation of the troublesome thing than in admitting that it is there. Few psychologists of to-day go the length Huxley appeared inclined to go. He had to admit that there was a queer something that we all had, and didn't know very well what to do with. But he regarded it as more of an appearance than a reality. To-day it is by some regarded as not even a mere appearance. An appearance is the unchilled form of the term *phenomenon,* and some writers do not allow to consciousness the rank of even a phenomenon: they call it an *epiphenomenon,* which means that it is merely something added to a phenomenon, a sort of appearance of an appearance. But things are not hopeless so long as the existence of consciousness is admitted under any form.

THE GESTALT THEORY

We had the comfort of noting that Dr. Kurt Koffka clearly recognizes the fact of consciousness, though he is specially careful in his use of the term. This is particularly gratifying to those of us who obstinately believe that we possess consciousness and set a good deal of store on this possession; for Koffka is a rather important person in the psychological world of to-day, being in fact one of the most prominent leaders in a new movement that seems likely to make a permanent impression on the development of the subject. Though powerful, this wing of the new psychology is not old. In fact it made a somewhat sudden appearance in the world rather a short time ago. Its birth is traced to an address given by a certain Dr. M. Wertheimer in 1912, on "The Seeing of Movement." The name given to this new mode of treating psychology is *The Gestalt Theory.* The German word *Gestalt* means *form,* so the word has been Anglicized as *configuration,* and the followers of the *Gestalt* psychology are beginning to be called *configurationists.* The general characteristic of the new movement is to regard things as wholes rather than as isolated parts. Analysis finds little favour since it results in a mere array of meaningless parts. A well-working watch pleases the configurationist. There is some sense in it. If, however, we take it to pieces and lay out the results on a sheet of white paper, we have only a bundle of meaningless items. The point is made still more striking if we take an animal body and dissect it. The meaning of all the different parts can be reached only by finding the particular service they render to the living whole. This illustration has the advantage of bringing the configurationist to the crucial point of consciousness.

There is no particular reason why he should be in any way suspicious of consciousness, yet we find that he has a morbid fear of it. Take one of the most distinguished followers of *Gestalt,* Dr. Wolfgang Köhler. In his Powell Lecture at Clark University in 1925 he becomes almost abjectly apologetic about having the appearance of recognizing consciousness as an element in his discussion. The explanation appears to be that in dealing with his special subject, "Intelligence in Apes," he feels that he must make all his deductions from the actual behaviour of the animal and make no assumptions about how the creatures feel about it

But configurationists have no need to be apologetic about consciousness. There is a sphere for it in their scheme, though no doubt their attention has been largely given to that kind of psychology that does not specially attract us here—animal psychology. It is interesting to note that while configurationism is usually associated with the Germans we had in England a form of it expounded on lines separate from the momentous address of Wertheimer. This is dealt with in Chapter XIII under the name of *noesis,* and will be found to confine itself to what goes on in human minds, where as a matter of fact we can deal with it much more definitely than in the case of the animals, whose investigators seem to go about with a kind of muzzle on to prevent their by any chance bringing in the hateful word *consciousness.* It would almost appear as if an epidemic of suspicion of consciousness had set in among the German configurationists, which might be quite well included among the other phobias in Chapter V—synoidaphobia, or fear of consciousness.

There is a great deal to be said for the German configurationists. They do not know English literature sufficiently to quote Matthew Arnold, but they would welcome his words when he speaks of seeing life *clearly* and seeing it *whole*. They do not really object to analysis in itself. What they resent is the loss of meaning implied in mere analysis. Taking the example of dissection—for configurationism does not confine itself to psychology but takes all subjects for its province—it would point out that before you can dissect you must first kill. The obvious retort of vivisection would not meet the case, for in this process the subject is not its natural self while under observation, and the essential characteristic of the new view is to treat everything in its normal relations.

Underlying the whole of the new scheme is the problem of the relation between whole and parts. Neither can be properly understood apart from the other. It will be seen that there is a philosophical turn in all this, and that the idealists feel quite at home in these surroundings. But the configurationists have no special preference for the idea of organism and its implications for the philosophers who call themselves idealists. What the new psychologists are concerned with is the way in which the psyche approaches the objects upon which it reacts.

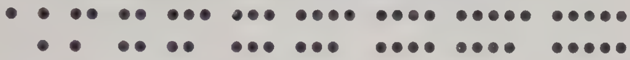
The old idea was to reduce a compound to its simplest elements and feed these in to the person who was called upon to assimilate the whole. Now we are told it is easier as well as better to begin with the whole. There is a principle that used to be laid down in education: Proceed from the simple to the complex. But these new psychologists would rather reverse the process. The educator, however, did not wait for the configurationist to tell him this. In actual practice plain common-sense teachers had anticipated him. The old-fashioned way of teaching reading was by beginning with the elements and building up the whole. But the old alphabetical method, as it was called, had to give way to the plan of those who anticipated the configurationists, for the look-and-say method began with wholes. The child looked at the word *dog,* and following the teacher's suggestion merely said *dog*. The next time he saw the word he said *dog* again, treating it as a whole, not as made up of three separate letters.

Teachers of practical subjects had long ago learned the lesson the new psychologists are teaching. We do not learn to ride a bicycle by mastering each of the essential motions. We do not learn first of all to sit well balanced on the stationary machine; then learn to pedal with the right foot and after that with the left. We throw ourselves upon the machine, which as likely as not throws us off. But we return to the charge again and again, each new attempt resulting in increased mastery of the whole. This example calls for a certain caution in applying the configurationist's rejection of analysis. As the process of learning the bicycle proceeds there arise opportunities for analysis. The whole process can now be separated into certain groups of activity, and these can be practised separately, though while each is being thus practised the work of learning to manage the bicycle as a whole goes on all the time.

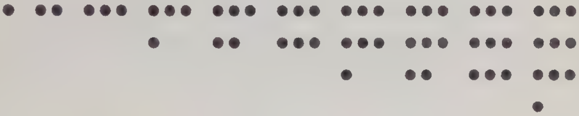
Dealing with the whole and the parts in connection with psychological processes, the configurationists call special attention to the fact that elements do not stand still while the process is going on. They are different when they are treated as part of an organized whole, from when they are exercised as individual elements. The results of the exercise of the separate senses, for example, vary according to which other senses are exercised along with them. They will not "stay put" so that their results may be collated by a system of additions and subtractions to form a desirable whole. The working differs according to the nature of the complex process in which they play a part.

CONFIGURATIONS

The application of the term *configuration* will be better understood if we use it in some examples where it can be literally applied. It may be held to be the imposition of a definite shape or conformation upon otherwise indistinguishable elements. Take the pips on playing cards. They are all alike, and if they were put on each card higgledy-piggledy they would be very difficult to handle. We would have to be continually adding up to see what number there were on each card containing six or more pips. But by the conventional arrangement we recognize at a glance the value of each card. This principle is further applied in the teaching of number to young children. The teaching begins with individual dots. But for ease in counting they are arranged in groups so as to make familiar pictures, as in the case of the playing cards. In America and Germany the unit of these groups is usually two, in England three. The American youngsters have the dots arranged something like this:



While the English have to make the best they can out of the following:



It is evident that in both cases a conventional arrangement is imposed on the uniform dots, and in this way an element of order is introduced among them from without, thus giving a configuration that helps us to deal intelligently with them.

The same principle is used by all of us in idle moments when we gaze at the clouds. We give to the shapeless masses in the sky certain definite contours that recall various familiar objects. The well-known but apparently senseless phrase in English, "very like a whale," becomes intelligible when we remember that it is Polonius's anxiously polite agreement to Hamlet's suggestion that a certain cloud looks like a camel, and, on second thought, a weasel, and finally "like a whale." When children see faces in the fire they are practical configurationists. It is true that the same process sometimes takes place as a matter of discovery.

In my childhood the first scene in a pantomime was often the demons' den, where all sorts of mischief was hatched only to be addled under the ministrations of the good fairies who appeared in the second scene. I vividly remember the horror with which I discovered the ghastly faces that the scene painter had contrived to make at first sight look merely the big rocks that make up the gruesome den. The faces were there to be discovered when the mind had time to dwell upon them with intelligence, though some of those faces eluded the less observant or more indolent spectators. Whether imposed from without by the observer through a process that may be fairly called invention, or ferreted out from within by a process that may be as fairly called discovery, this giving a meaning to apparently unconnected elements is an example of configuration.

It is largely used in all manner of puzzle pictures of the "Here is the mill—find the miller" type. To all appearance there is no miller on or near the premises, but by a careful examination of all the available but apparently meaningless lines that the investigator can find, he may be able suddenly to come upon some more or less recognizable representation of a miller. Frequently the discovery is made in a very sudden way—often called a *flash*. This flash is now getting a place in the methods of the more ingenious teachers. Examples of its application will be found in Chapter XIII.

In many of the textbooks on psychology we find examples of drawings that can be interpreted in two different ways. Two pages of an open book, for example, are represented by simple lines in such a way that the onlooker can regard them as either open toward him so that he could read the print on them if there were any print there, or he can regard them as representing two pages of a book that has its back toward him. Of course there are no lines to represent covers, for that would give away the exact position of the book: merely the two pages are represented. The reader can at will put himself in the position of seeing the book either open toward him or turned away from him. Naturally, if the pages were drawn in perspective the lines could be interpreted in only one way; the mind would have no choice in the matter. A similar quibble has been seized upon by advertisers. A drawing is made which according to how you look at it may suggest either six or else seven cubes clustered together. In itself there is nothing interesting in determining whether there are six or seven cubes in the group. But the fact that it is sometimes difficult for the observer to change from the six point of view to the seven rouses the competitive spirit and the picture may be used as a sort of game with a certain resulting publicity to the benefit of the advertiser. Another popular example of this ambiguity of perception is supplied by a drawing of a solid stair that according as you look at it may be regarded as either upside down or right side up. In all three cases we have applications of the principle of configuration.

Anyone who looks into the matter will see that the configurationists are on good terms with the physiologists, though perhaps on not quite so good terms as are the behaviourists. The *Gestalt* psychologists, after all, *remain* psychologists. They want all the help from physiology that they can get; and they are grateful. But they want to retain an area of their own within which they can employ their special methods, methods that psychology demands and physiology, as a natural science, does not admit. The physiologist has so much of his own to attend to that he has not too much time to spare for the psychologist. He can do without him. But it is not a case of vice versa. The psychologist always wants the solid backing he can get from his colleague on the bodily side. In spite of the unceasing Heraclitean flux of his subject the physiologist has always at his back a solid array of established facts, of immutable material. Anatomy is always there to fall back upon, and altogether he can afford to assume the position of a long-established firm with extensive and reliable assets.

PHYSIOLOGY AND PSYCHOLOGY

The working psychologist at college or university when preparing an examination paper for his students is apt to envy the physiologist the definiteness of his subject, and particularly the clear-cut area of the human body. If it were not for this

Puckish element, this consciousness, how happily the psychologist and the physiologist could work together. As a matter of fact, it is very noticeable what a tendency toward the physiological marks the present-day psychologists. Dropping into many of the psychological classrooms of the universities of to-day, we may sometimes have to consult our schedules to make sure that we have not stumbled in error into a physiological lecture hall. Naturally, this biological bias is more marked in certain branches of the subject than in others. For it has to be noted that psychology has now definitely split up into quite a number of separate departments.

In the old days it was certainly possible, and indeed usual, for one man to undertake the whole subject, and indeed to include branches of other subjects as well. For in those old days it was quite customary to have psychology graded as a branch of philosophy. At that stage it consisted of a body of observations on human nature about which there was fairly general agreement. Under these conditions one man might not unfairly be responsible for the whole.

But gradually the subject expanded, for it had within it the seeds of all the developments with which we are to-day faced. Thus at the very beginning there was a physical side to the study, and in those primitive psychological classrooms where I studied were to be found drawings on the blackboards. These were of two kinds. First, naturally, we had the ordinary physiological diagrams. Our instructors were particularly addicted to diagrams of the eye, and the inverted dagger or candle on the retina played a brave part. But the brain tracts were not neglected. The upper brain in particular remained so long on the blackboard as to become a rather intimate friend. We were taught that the pinkish gray matter of the upper brain, the cerebrum as it was called then, and even yet in the new nomenclature still is, was the seat of consciousness. This external layer, the cortex, we were told contained a vast number of multipolar cells, so called because the central body of the cell was finished off with a number of prolongations ending in what we supposed would be called poles. In any case we were taught that these cells were the seat of ideas, but our teachers gave us no satisfactory answers when we wanted to know whether each whole cell was the residence of a single idea, or whether each pole had an idea to itself. We had to be content with the general statement that those cells "correspond to" certain ideas.

But while our lecturers were averse to giving any minutely detailed information of the localization of ideas, they were rather exuberant in giving general indications of the local function of various parts of the brain area with regard to the muscular activities of the body. Our brain diagram had names printed all over it, marking off certain areas as being given up to the control of certain muscular areas. I remember well that I wondered why special prominence should be given to the area controlling the forearm, for its name was printed in specially prominent capitals.

But the star area of the brain, the one to which special attention was always called, was a section of the lower front portion on the left side. The gray matter of the cerebrum is divided into three lobes on each side—the frontal, middle, and posterior; and it is in the lower frontal lobe on the left side that an area is set apart under the name of the *Brocal region,* after a distinguished French physiologist called Broca. Through him was made the discovery that to this small region was handed over the function of attending to all the matters connected with speech. It is found that in every case of serious disturbance of speech investigation shows that there is some sort of lesion in this area of the brain.

When the lesion is serious there may be a total loss of the power of speech, but according to the nature of the lesion there may be various degrees of the disease, the general name of which is *aphasia*—the literal meaning of this term is the negation of speech. In mild forms the patient merely mixes up words. He can utter the word perfectly, but it is not the word he wants. He desires a time-table, but the word he actually utters may be *coals.* In other cases there is a general confusion in the use of terms and yet perfect understanding of what the words do mean, accompanied by irritation at being unable to use the right terms. Our interest in all this is not that of the medical man who is called on to treat the case. It lies in the fact that here we are brought into direct contact with a definite case in which there seems to be a specifiic connection between the purely physical and the purely psychic. The connection between words and thoughts is so close that once we have brought them into such direct connection as in aphasia, we seem to be on the threshold of an investigation that should lead to the clearing up of at least some of the obscurities of the fundamental problem of the relation of mind and body.

The other sort of diagrams the earlier psychologists used to put on the blackboards were those connected with physics. Both in matters of seeing and hearing there was found to be in psychology a field for the application of the principles of physics. Laws were discovered, in fact, that seemed to reduce—or raise—psychology to the level of physics. Weber and Fechner are psychologists whose names are connected with certain laws that expressed in mathematical terms a relation between the stimuli and the reaction in the case of certain of the senses. The German psychologist Herbart spoke of calculating the interactions among ideas in terms of mathematical ratio. Not much has come of these premonitions, probably because the psychic manifestations did not act quite up to the mathematician's standard. Yet the mathematical rules worked sufficiently well to justify a group of psychologists in emphasizing this aspect of their work by calling themselves psycho-physicists. The fact that *psycho* is put first in the compound is an indication that psychology is regarded as the senior partner in the firm, and that, in this connection at any rate, physics takes the second place. Some psychologists take a very hopeful view of the case, one of the most distinguished of them—the late Professor E. B. Titchener—being accustomed to say that the psychological textbooks of the future would be as full of formulæ as the physics textbooks are to-day.

With all these refinements and elaborations growing upon it, we cannot wonder that the psychology of to-day is a very different thing from what it was in the old days when a single professor could claim the whole subject as his own. No one could possibly be a master in all the branches into which psychology has spread itself. Without doubt in a small college to-day it may be necessary to have one man take up the whole subject, and very often he makes an excellent job of his teaching. But in his case it is recognized that his work is one of exposition rather than of research, and in any case he is not expected to cover the whole field in any detail. There is a big broad field that forms a sort of groundwork for psychology of all kinds. This field the single professor is supposed to cover efficiently. But beyond this the subject has spread in at least three main directions.

The subject studied in the broad way expected of the single professor in a college takes a very definite range that to some extent bears traces of the limitations of the old-time teachers of the subject. In the early days the subject of psychology was *man*. It was carried on at the natural history stage. The lecturer took man as the professor of zoölogy took the lion, the rat, or the giraffe, and told his class as much as he could about the animal in question. We have only to compare Goldsmith's *History of Animated Nature* or Buffon's *Natural History* with a modern textbook on biology to realize the difference of approach of the old psychologist and the new. The primitive psychologists dealt with the psyche as Buffon might deal with the tiger.

When men like Dugald Stewart, Thomas Reid, and Sir William Hamilton began to develop their philosophy along psychological lines, they treated their subject matter after a genuinely Goldsmithian fashion. Their subject was not man in general but rather a particular type of man that specially interested them. Without being quite aware of it they set up a sort of lay figure that helped them in their psychological studies, much as the artist's wooden model helps to keep him right in dealing with his representations of the human form in certain specially difficult positions. But this metaphorical lay figure of the early psychologists, when we begin to look at it a little more closely, turns out to have a rather striking resemblance to the psychologist himself. Both are mature persons rather above the average in intelligence and attainments, and both are endowed with an unusual power of looking within and examining themselves. In the phrase of the psychologist of that day the lay figure and its creator alike would be described as having a high power of introspection, for at that time the psychologist did not know any better than to use the term that is anathema to the behaviourists.

The old psychologists had little concern with the great variety of men and women that make up human society of all grades. Psychologists of this early stage were descriptive rather than analytical, and their descriptions suffered from their dearth of models. In recent years all this has changed; the psychologist of to-day takes all humanity for his subject and does not wait for specimens to wander into his study. He goes out to seek them in the wide world; what Scotsmen call "the muckle furth."

THE GREAT VARIETY OF HUMAN NATURE

The first of the three main lines of development from the old psychology to the new took account of the great variety of human nature. Naturally, thoughtful writers on general subjects had been noting and recording the differences to be observed among the people to be met with in life under all manner of conditions. But these had dealt with the matter from the artistic standpoint. The psychologists as such did not trouble to look at such commonplace matters. This point may be illustrated by the fact that, while everybody had noticed as a part of common experience that young people differ radically when we examine them at different stages, psychologists showed no interest in that. Such raw material was too raw for them. In effect the psychologist's attitude was: let them grow up and become real men and women, and then we shall see what we can make of them. He did not say so openly, but knowing my old-fashioned psychologist pretty well, I should not have been at all surprised to catch him saying under his breath: "Why trouble me with these immature little wretches! By the time I had analyzed them they would have taken a new development and I would have all my work to do over again. Let's wait till they are ripe for inspection, and have it all over and done with."

But public opinion was too strong for the professional psychologist, since the interests of children were involved, and no force so rapidly rouses public opinion among us English-speaking people as any possible danger that the children shall not have fair play. The day is past when there is need for a "Cry of the Children," but the spirit that gave Mrs. Browning's poem such a stirring power is stronger to-day than ever. But in the matter of psychology it was the teachers who applied the spur to the psychologists.

The teaching profession in its collective developments realized that a scientific knowledge of the young people was essential, and a demand was made for the psychologists to put on their thinking caps and produce something that would be of practical use to the teachers in their dealings with their pupils. Naturally the psychologists at first made a poor show. They knew nothing about children; these were far too different from the lay figure to come within the psychologist's range. But the teachers took the matter into their own hands and made a sort of crude psychology of their own. This was not at all popular among the professional psychologists, who sneered individually and collectively at this raw outside competition. But they were put on their mettle all the same, and the process was stimulated by the fact that the demands of the teachers and their official superiors led to the establishment of chairs in psychology all over the country, and since the majority of the students attending these university courses were teachers, the study of immature human nature acquired an economic importance that led to its serious pursuit.

It began to be realized that a boy was not a *little* man, but a *potential* man. It dawned upon psychologists that their lay figure did not exhaust the possibilities of the case. Since they had for professional reasons to study the different stages of development of man, why not carry on the study to the after-maturity stages? Why not set up a composite or changing lay figure that would include all the seven ages pictured by the melancholy Jacques? Each of them deserved a psychology to itself. The puling babe and toothless eld no doubt did not present stages important or even interesting in themselves, but they formed a part of a whole that Shakespeare presents in such a form as stimulates us to deal with the human being as an organic unity that has running through it a force that is "all in the whole and all in every part." It was realized before configurationists got their hands in, that each of the seven ages could be truly understood only in its relation to all the rest, and that the observer must keep continually passing from the part to the whole and back again, in order to get a just conception of either or both.

This development of psychology obviously emphasized the element of growth and would in a less sophisticated scheme of life have been called the Psychology of Growth, but no serious harm has been done by the imposition of the Greek form of the title; we are all able to recognize this kind of psychology under its chilled name Genetic Psychology. The essential difference between the child and the adult is that, while the adult must live, the child must live *and* grow. Grown-ups live in a state of stable equilibrium, children in a state of unstable equilibrium. Accordingly, the main point of the psychology of childhood is to be found in the process of growth and all that it implies. This point is worth while keeping in view in the application of psychology to life, and we shall come back to it again in another connection.

SOCIAL PSYCHOLOGY

The second branching off from the trunk of general psychology took note of the effect individuals have upon one another in life. The original psychology considered only the individual under discussion. But it was gradually borne in upon psychologists that people are not solitaries, and that they behave differently according to their position in relation to others. They are one sort of person when alone, another when with a small group of friendly or hostile people, and still another when they are thrown into the midst of a miscellaneous assemblage of folk.

Psychologists began to consider, in a way that gave much satisfaction to those who afterward developed into behaviourists, what it meant for their subject that human beings behaved in quite a different way if they were taken individually, or in the mass.

Out of these considerations arose a branch of psychology that has developed in two slightly different directions. The two are sometimes grouped together as Collective Psychology, which is the wider term, but some writers prefer to mark off a separate branch under the title of Social Psychology. The distinction will be made clear in Chapter XVII.

Perhaps to be included under this collective heading, though marked off by certain special qualities connected with the matter with which the subject works, may be mentioned that form of psychology that is sometimes called Occupational. This has acquired a certain importance from its economic applications. It includes not only the personal qualities essential to success in the various occupations, but a study of the effects produced on the psychic make-up of the persons exposed to the influences resulting from the practice of the various occupations. Under this heading would come all those applications of psychological principles to the actual manipulation of processes in industry. The changes that Frederick W. Taylor introduced under the name of "Scientific management" are at home here, and of them we shall have something to say later on. Without doubt a separate and important branch of psychology will develop around economic and industrial conditions and their manipulation in the best interests of employers and employed. In view of the work of Dr. C. S. Myers and his school, the branch may be said to be already in existence.

UNCONSCIOUSNESS AS A BASIS

The third line of development is concerned with what may be called the negative side of consciousness. Here we have a development that, so far from trying to minimize the importance of consciousness, actually proposes to extend the range of consciousness into a vast annex where consciousness still operates in a sort of negative way. As in algebra we cannot effect an extirpation of all the negative signs while retaining all the positive signs, so we cannot add a whole negative annex without affecting the positive elements in the original structure. To be sure, the behaviourists may grin as they point out the difficulties in the way of the new negative psychologists. If we cannot define consciousness how much less can we define unconsciousness? And yet this new group of psychologists come along, and under the name of *psycho-analysts* propose to build a whole system on a foundation of unconsciousness. We shall of course deal with them in due course as our book develops, and it will be found that we are not over-enthusiastically in their favour. But in the meantime we welcome them as a sort of balance to set off against the wilder behaviourists. The very fact that the psycho-analysts build on the unconscious proves that they accept the conscious, and are therefore on the side of the angels, so far as the angels are on the side of the orthodox psychologists. Indeed, from the point of view adopted in this book, the psycho-analysts and the extreme behaviourists rather tend to cancel each other out and leave a clear field for sensible people who hold a sane middle course.

With all this balancing of parties within the psychological camp, we must not forget that there are outside critics who are inclined to call for "A plague o' both your houses!" There are those who regard the professional psychologist with suspicion, who question the value of his results, and are inclined to regard him as some sort of charlatan. These are they who keep in circulation ancient gibes about philosophers looking in dark cellars for black hats that are not there. The popular sneer at the psychologist is that he expresses in obscure language what everybody understands by the light of plain common sense. There is this justification of the gibe, that when the psychologist's results are sound they must appear to the plain man as evidently true, and therefore to some extent as commonplace. The psychologist is apt to suffer from the same reaction as Sherlock Holmes did when he explained to Watson his mode of investigation. After the processes are disclosed the results that at first were startling appear to have been obtained in a childishly simple way. But this discouraging Watsonitis is certainly on the wane, and psychology is being taken seriously, perhaps too seriously. When we find the heads of big business concerns of all sorts employing professional psychologists to determine the allocation of work among their employees, and the amounts to be included in these employees' pay envelopes, we can hardly complain that the subject is being underestimated.

All this leads up to a possible definition of psychology that may find favour with the plain man. Why not call it bluntly the "study of human nature"? This does not claim too much, and yet when we look into it we find that it involves matters that demand the most scientific treatment if we are to obtain reliable results. Indeed one of the keenest psychologists who ever lived, the Scotsman David Hume, called his great work a *Treatise on Human Nature*. If we adopt this definition we are at once freed from the reproach of poaching on the domain of the professional psychologist. For human nature is no man's preserve. We are all studying it with more or less success every day of our lives, though we do not introduce into our study that systematic attitude that would entitle us to claim to be psychologists in the technical sense of that term. As we have already seen, we have a sort of charter of the legitimacy of our study of human nature in Pope's proclamation that the study of studies for human beings is humanity itself.

While we admit that man finds a suitable study in man, we must confess that it is carried on within a very wide range, from the scrupulous accuracy of the psychological laboratory to the rough and ready "sizing up" of the smokeroom. The readers of a book like this come somewhere about the middle of the range. They cannot afford the time, and they may not have the inclination, to go into the details of the laboratory, and yet are not content with the mere generalizations of the Pullman car or the drawing room. They are willing to lift their hats, or curtsey, as the case may be, to the mandarins in their laboratories, and that in no perfunctory way. Their respect is perfectly genuine but does not go the length of the sincerest flattery—imitation. They are quite content to admire the psychologist in his den, and at the same time remain themselves in the sunshine outside, and accept gratefully whatever parts of the mandarin's results can be understood and usefully applied by the cheerful mezzo-brows who remain without. Such outsiders accept from all types of psychologists what they can give, but they want to let all of them have a fair show. At first sight the behaviourist seems to bring exactly what our outsiders need and desire, and they are willing to accept gratefully the gifts he brings, and that with no internal suggestion of a gift-bearing Greek. But unfortunately, certain plain questions arise in the inquirer's mind, and the behaviourist has no answer ready. So the outsiders accept "on account" all that the behaviourist gives them, and pass on to learn what the less exuberant psychologists have to say on the matters that trouble the intelligent outsider.

The first thing the orthodox psychologist does when an honest inquirer comes along is to give him warnings about certain dangers he is liable to encounter in his investigation—dangers that would never naturally occur to a decent straightforward seeker after truth. Our next chapter will convey a warning of special value to the unbiased inquirer.

CHAPTER III

OCCAM'S RAZOR

How to Use the Razor—The Use of Metaphors—A Warning

SOMEWHERE round about 1439 A. D. there died at Munich a Franciscan Friar who left behind him a great array of controversial works that do not greatly concern the world of to-day, and one sentence that still rings through the university lecture halls of the two hemispheres. This William of Occam was more fortunate than many great thinkers: he was appreciated during his lifetime. Not that his views were universally accepted, but he had a large following, and those of his way of thinking valued him so highly that they gave him two epithets of praise instead of only one, which was the usual ration of praise in his day. For in those times, when the philosophers called the Schoolmen flourished, it was customary to give to the learned doctors who did the world's thinking titles that expressed the admiration of their enthusiastic disciples. These vied with one another in the warmth of praise, and produced a crop of epithets that would have caused the old doctors to blush, had they not become so accustomed to torrid praise (and violent abuse) that a mere epithet had little power to discompose them.

For in those days philosophical oratory had a certain publicity attached to it that brought it into a position in which it may be compared to prize fighting and other popular competitive displays of to-day. These old argumentative Schoolmen occupied the same position in the public eye that distinguished baseballers and cricketers hold to-day. As the Twentieth Century footballers and other athletes get pet names from their admirers, so these Fourteenth Century mental gladiators were acclaimed under certain vivid epithets. One was known as the "magnificent doctor," another as the "angelic." It is doubtful whether the "seraphic doctor" ranked above or below the "angelic"; no doubt the followers of each claimed to have devised the higher title. Into my memory float a number of resounding titles—the illustrious, the subtle, the irrefragable, the universal, the renowned, the venerable, the incomparable, the profound. Only at "the perfect" does the memory baulk, and even for this summit there may be historical justification, though at the moment I cannot place it anywhere.

When it came to William of Occam it would appear that his admirers found it impossible to get all their admiration into one epithet, so they expanded into two. He was known as the doctor *singularis et invincibilis.* Though I am quite aware of the danger of using the word *unique,* this seems an occasion for applying the exclusive word, and we may render the titles into English as "the unique and unconquerable doctor." He does seem to be entitled to the second epithet, since he selected no less formidable an opponent than the Pope himself. A controversialist who in those old days could set himself up against the head of the Church and even publish a book with the daring title *Concerning the Errors of Pope John XXII* and after all die in his bed might not unreasonably claim invincibility.

But our interest here lies not in William's courage but in one sentence that he made famous, and that still enshrines a principle to which attention needs to be called in all our thinking. He was a nominalist in those old times, which means that he adopted the view that what we call *ideas* have no material existence. We shall have a great deal to say about ideas in the following chapters, but at the present stage it may be useful to give an account of a view of ideas that no longer disturbs us but in William's day was a matter of violent controversy. Those who did not agree with William were called realists, their position being that there is something *real* corresponding to general ideas. The name used by these old Schoolmen for general ideas was *universals,* and the quarrel between the two groups was whether there was something real behind the universals. Plato was a realist and believed that there was something existing in the universe corresponding to our general ideas. For example, we talk glibly about a bed. We know the bed that we sleep upon, we know the picture of a bed that the artist may draw for us. But neither of these, according to Plato, is the real bed. There is a perfect pattern of bed laid up in heaven. This is the real bed, and all the rest are mere imitations or representations of this perfect pattern. Aristotle also believed in a genuine real bed, though he introduced certain qualifications that we cannot take time to discuss here. It is enough that between them Plato and Aristotle were the patron saints of the realists, though the Platonist and the Aristotelian schools differed from one another.

On the other hand, opposed to both kinds of realists were those who believed that there was nothing real to correspond to general ideas or universals, nothing, that is, except the mere name. There is the actual bed we sleep on, and the word *bed* that enables us to speak about bed, and convey our thoughts and wishes about beds; but there is nothing more. These nominalists maintained that beyond the actual beds that exist in the world there is nothing but the "breath of the voice," the mere word. Among these nominalists William of Occam was one of the most brilliant. He became very sarcastic about those people who were not content with the mere word and must go on inventing realities outside that did not exist. There is no perfect pattern of bed laid up in heaven or anywhere else. There is just the bed and its name, and that is all there is about it. We must not go around inventing things that are not there, and for which we have no use. What in the world are we going to do with a perfect pattern of a bed, or anything else, laid up in heaven! And all this William put into the famous sentence that still rings round the world. He put it into Latin, after the manner of his time, so we had better have it in that form, and then work it out in plain English: *Entia non multiplicanda praeter necessitatem.*

HOW TO USE THE RAZOR

Put into bald English this runs, "Entities must not be increased beyond necessity." Naturally, William had in view the *real* universals of Plato. There is no necessity for them, so why should they be introduced? The word *entity* is a difficult one to deal with. It means literally *an existence,* anything that exists. The word *thing* is perhaps the nearest equivalent in English. You have only to note how often we use this word to realize how useful it is. When we do not know how to describe exactly something we want to talk about we almost inevitably bring in this word—as indeed I have in this very sentence, for I have had to introduce the word some*thing.* It is worth noting that *thing* does not necessarily imply concreteness; it need not have length, breadth, and thickness. For example, it is quite permissible to say there is no such *thing* as "honour among thieves." So *thing* is not a bad equivalent for the term *entity,* though of course far from being a synonym. Sometimes we speak of a *rational entity,* which means "a thing which has an existence only as an object of reason."

What Occam means by his saying is that we must not assume that there are separate existences where there *are* no such existences. We are to pare off from our thought whatever can be done without. That is why this sentence of Occam's has won for itself the name of "Occam's razor," the instrument by which he cuts off all the superfluous entities that the mind is apt to create. Take, for example, this very phrase we are dealing with. There is a natural tendency among ordinary human beings to treat this phrase as if it referred to an actual razor. If the more intelligent people do not go the length of picturing William going about wielding a steel razor, they often cannot get away from the idea that there is something in the world that may be called Occam's razor. This is not a mere fanciful way of putting things. There is a real danger to the clearness of our thinking through the influence of this tendency to create an entity where none exists.

So real is the danger that philosophers have given this tendency a name—and a very formidable name at that. They warn us against the tendency to *hypostatize.* The unattractive word *hypostasis* really means the process by which we make a breach in Occam's principle; we assume an entity that is not there. This is no mere vague generalization, no philosophical quibble that does not really matter to the practical man. Hypostatization may lead to false views on important matters and may lead to errors of practical importance.

In psychology we are specially liable to errors of this kind. We are continually imagining things to be there when there are no things. We shall find innumerable examples of this tendency as we go on. In the meantime we must look more closely into the process and see what underlies it.

We are apt to think that there are such things as virtue, vice, contempt, dishonesty, but as a matter of fact there are no such entities. So in psychology in particular we have a series of qualities that are usually called *faculties*. It used to be customary to treat these as entities. We were said to have such things as memory, judgment, imagination, reason. Now it is customary to say that we do not have any of these qualities. It seems a rather drastic thing to deprive us of all the qualities that we used to think we possessed. But no serious loss is sustained. While we do not *have* these faculties we are still able to carry on our living just as if we had. We still remember, judge, imagine, and reason, though we are denied the possession of the faculties of memory, judgment, imagination, and reason. Psychologists of a philosophical turn of mind say that instead of *having* faculties we should be described as *being* faculties. The reader may be inclined to say that all this does not get us anywhere, and that it is all a matter of hair splitting. But underneath the apparently trifling distinction between *having* and *being* faculties there are important practical issues, as will come out later, when we deal with "The Two Worlds."

To be sure, there are certain types of people to whom hypostasis may be permitted. Poets may hypostatize without sin. The poetic license has a wide field, a field that covers hypostatization. When the poet, with his eye in a fine frenzy rolling, gives to airy nothings a local habitation and a name, he is emphatically hypostatizing, and no blame can be attached to him. He is doing just the sort of thing that people expect of him. That's what he is for. The same license may be extended to the dramatist and novelist, though with certain limitations. So long as what are called creative artists keep to the creative side, so long as they are artists doing artistic work, they may hypostatize as much as they please. But whenever they come into the region of thought they must put up the same opposition to hypostatization as the rest of us must. The interests of clear thought are paramount.

All this warning may seem out of place in a book professing to deal with psychology, and that in a rather friendly and unpretentious way. But this subject of psychology is in a very precarious state with regard to the matter of hypostasis. There is probably no subject outside of the creative arts that is so beset by metaphors. The subject matter is so abstruse that it is very difficult to expound it directly, so we are irresistibly driven to use metaphors. George Eliot pokes fun at even so great a man as Aristotle for praising, as specially worthy of respect, the mind that is given to figurative expression. She thinks he should rather regret that people can so seldom say what a thing is without saying that it is something else. True in all departments of thought, this is particularly noticeable in psychology. Even in ordinary speech remarks that have a genuinely psychological background are nearly always put into phrases that have a time and space background. We talk of a man having something at the back of his mind, of a veil coming down and obscuring our thought, of something being burned into our memory. The interesting thing is that this metaphorical tendency is not confined to the plain man, the inexpert outer-court psychologist. It is carried into the inner court and is often there elaborated. A great many more or less professional psychologists use metaphors deliberately as a part of their exposition. No doubt they are inclined to defend themselves by protesting that they use figurative language purely for expository purposes, and not as expressing the hard and fast truth. But when we examine their writing as a whole we find that their figures form an essential part of their argument.

Nowhere does the difference between psychology and physiology come out more strongly than here. With the body in the dissecting room we know exactly where we are. All the organs and tissues lie before us in recognized positions. Time and space have to be considered, but we have means of keeping them in their places. We deal with facts as facts, things that can be verified by other people who are studying the same subject. But when it comes to psychology we are reduced to studying things either at second hand, or, if we adopt first-hand observation, we have to deal with what is merely our own experience, an experience that cannot be submitted to the investigation of another. It is in trying to get others to understand this experience that we are driven to fall back upon metaphor.

THE USE OF METAPHORS

Even when left to himself and his own thinking the psychologist cannot get rid of metaphor. Truth to tell, he does not seem to try to, and few readers of psychology would urge him to give it up. It supplies that touch of the concrete that is necessary to save the subject from floating off into the mists of sheer unintelligibility. The mind, which, as we have seen, has often been made to stand for the whole non-material part of man, has been *presented* under a great number of figures, each useful for bringing out some particular aspect of psychic life. Very often a metaphor is selected that will have the definite effect of favouring the special view that its inventor adopts. For example, it may suit the writer to call the mind a stomach, in order that he may apply his notion of feeding it with food convenient for it. On the stomach plane the school curriculum may be analyzed and reorganized so as to suit the theories of the man who uses the figure. If on the other hand he is more concerned with the processes to be carried on than with the subject matter to be taught, the expositor may compare the mind to a field. This would give him just the opportunity to plough and harrow it with the various implements at his disposal in the metaphorical field he has chartered for his operations.

One of the most popular metaphors is a receptacle of some sort—a box, a bottle, a basket, a bag—anything that will hold something. A fishing basket, for example, goes very well for a theory that regards man as a fisherman out fishing for ideas. But in any case the important point is that the elements of knowledge must be gathered up and stored somewhere. This misleading figure is apt to induce error, and illustrates in quite a useful way how mere matters of words may lead to dangerous applications in real life. In presenting the mental make-up and methods of Sherlock Holmes, Sir Conan Doyle makes his hero avoid all sorts of reading that bring to him knowledge that is of no use in his profession, on the ground that his mind can contain only a limited amount of knowledge, and that for every new fact taken in after a certain saturation point has been reached another fact already within the knowledge box must be thrown out. This is an unfortunate figure, for it is not a matter of material fitting into a receptacle of fixed capacity. In many connections it is true to say that the more knowledge acquired in a given matter the more knowledge the mind can take in on that matter.

The mirror is a rather trifling metaphor that does not carry us very far, and is not of much value as an aid to exposition. In a certain sense the mind does mirror the outer world, but it does much more than that, and the impression conveyed by the figure is that the contact between the mind and the outer world is purely superficial and temporary, whereas, as we shall learn when we deal with "The Two Worlds," the interaction is a profound one and leads to important modifications of the psyche. But even such superficial metaphors may serve their temporary purpose and do no serious damage, so long as we do not allow them to subtend too big an angle in our minds. For example, there is a phrase regarding a good working mind that is quite effective: "Wax to receive and marble to retain." Obviously the mind cannot be both wax and marble, but certain minds do seem to possess the two qualities indicated. In such cases we must take the metaphor at its poetic value, just as when the mind is compared to a well, to a sponge, to a sieve, to a die stamp.

But some important metaphors are worked out in a little more detail in order to bring out the truths that their makers believe underlie them, though it must be confessed that more metaphors are analyzed to bring out the *fallacy* they involve, than for almost any other reason. But in all cases wise authors are careful not to carry their metaphors too far. Indeed the general disrepute of metaphorical writing, outside the poet's beat, is to be traced to the natural tendency of humanity to carry the comparison beyond the legitimate limits. The moment analysis of a metaphor begins the tendency of the critic is to go into detail, with the inevitable result that discrepancies occur. There is a protest that one hears very frequently in those college debates that tend so rapidly to become heated. It runs: A metaphor is not an argument. The cause of its popularity is no doubt the ease with which comparisons can be reduced to absurdity by carrying them beyond reasonable limits. Clever debaters complain that, if they are not allowed to carry a comparison to the point of absurdity, then the man who uses the comparison gets all the benefit of the argument involved in the absurd part of the comparison. But leaving out the argumentative side of the matter, we shall find that we can learn and teach a great deal by metaphorical expression, and in any case in psychology we are bound to deal with the metaphorical side whether we will or no. It is there already, and we must deal with it. Like wise folk we shall do well to look into it. When a man like Plato does so much of his reasoning by means of metaphor it is not a very sensible thing to shirk metaphorical reasoning and demand categorical exposition.

It is a good exercise for a student of psychology, one who wishes to look into his subject in however easy-going a way—or indeed a student of anything else, though psychology presents a specially favourable field for this form of exercise—to take up a series of metaphors in his branch of study, reduce them to their lowest common denominator, and work out all the valid and even invalid analogies. Take, for example, William James's famous figure of the "stream of consciousness." This does not imply the metaphor that the *mind* is a stream of consciousness. It is rather a figure in which our experiences are compared to a stream of consciousness. The more you think about it the more natural it will seem that this stream of consciousness is really the psyche itself, so far as there is an entity that may be fairly called the psyche. It takes for granted that the psyche is essentially an activity, and its form of activity is compared to a stream. The point to be emphasized is the continuity of conscious experience. One mode of being conscious slips into another without any sharp break.

We can well imagine a psychic pathologist using a quite different figure, one that would emphasize the clear breaks in consciousness that sometimes occur in disease of various kinds. He might find what he wants in a glacier, where the crevasses at turning points would supply illustrations of just the gaps he needs for his purpose. But with James's stream as it stands, we find a certain difficulty if we press the application to the normal psychic experience. For, after all, consciousness is not quite unbroken all the time. There are occasional lapses that are not altogether pathological and yet cause gaps that are not in keeping with the absolute continuity of a real stream. Here, no doubt, the ingenious expositor would rise to the occasion and explain that in the real stream there are interruptions caused by rocks and other obstructions, producing curious back-turnings and side-twistings that correspond to the apparent gaps in consciousness. The critic, on the other hand, is equally ready with his objection that in the actual stream the whole body of water never quite disappears, while the whole of consciousness at appropriate moments—as in sleep—appears to vanish entirely.

Trifling as these criticisms appear to be, they indicate a state of mind that tends to spoil the effect of all metaphors. The natural tendency is to apply them in too great detail. For example, I have heard at a students' debating society the objection brought against the stream of consciousness that it could not hold, because if it were true then ideas ought to be *wet*. It is seldom indeed that frivolous criticism is carried to such lengths, but in arguments where metaphor plays a big part perversions occur that are almost as ludicrous.

A good plan for those who use metaphors for the purpose of honest exposition, whether in psychology or in any other subject, is to keep vividly before the mind the one essential element in connection with which the comparison is made. The mathematician's view of analogy comes in here very handily as a guide to the limitation within which the metaphor may be used. Mathematical analogy is limited to mere quantity. Take the following:

$$a : b :: c : d$$

This is read contentedly by the schoolboy in this fashion: "As *a* is to *b*, so is *c* to *d*"; and is held to establish a quantitative relation such that we can prove that *a* multiplied by *d* equals *b* multiplied by *c*. In an ordinary metaphor there can be none of this intimate manipulation of the elements, because as a rule we include certain elements that are not only irrelevant to mere quantity, but have no real relation to the comparison at all. To be sure, the metaphor may be represented, as in the schoolboy's case, by the formula:

$$a : b :: c : d$$

and in the case of the well-known metaphor of the camel as the ship of the desert the schoolboy might obediently write it as follows:

The camel : the desert : : the ship : the sea

and read it off:

"As the camel is to the desert so is the ship to the sea."

If the schoolboy be asked to explain what he meant by this formula he may be granted the grace to say something like: "The ratio between the camel and the desert is the same as the ratio between the ship and the sea." It would not be safe with the ordinary schoolboy to press for any further explanation, since he would almost certainly get into difficulties about the details, and an ingenious schoolmaster would have little trouble in getting him bogged about the number of legs a ship has got, and about the exact locality of a camel's keel.

Perhaps it would be better for our purpose to speak of the *identity* of ratios rather than of their equality, for this notion of equality introduces a quantitative element that is out of place in this connection. Identity of function is what is implied in the metaphor used as a method of exposition. It assumes a knowledge of a function being performed under a set of known conditions, and passes from that to the same function performed under different conditions. Obviously, the better the first set of conditions are known to the reader or hearer, the better illustration they form. Thus it comes about that personification is a particularly effective type of figurative exposition, for we are all assumed to know how persons act.

In psychology it is frequently used in connection with the activities of ideas. This personification is used deliberately and wittingly, as when David Hume speaks of the ideas disporting themselves on the stage like actors. But it is not uncommon for writers to deal with ideas in a personified form without quite realizing that they are working figuratively and not literally. There is no harm whatever in personifying ideas for purposes of exposition and illustration, but there is considerable danger in using these devices if we think that we are dealing with facts in a literal way. In what follows in this book there will be a rather liberal use of metaphors of all kinds, but, wherever necessary, a reminder will be given that we are using figurative language. So figurative, however, is language in its own nature that it is not always either possible or necessary to put up the red lamp to indicate that we have departed from the straight path of literal expression.

TWO FAMOUS METAPHORS

There are two metaphors used in psychology that have become classical, and no one can claim to know much about psychology who does not know them. They are both not merely useful as expository devices but indicate in no uncertain way the psychological creed of their inventors. The first belongs to the psychologist, John Locke, probably the best known English exponent of our subject. He compares the mind to a blank sheet of paper. On this paper the senses write, the result being the acquirement of mental content. The important point about this metaphor is that it insists upon the passivity of the mind and the activity of the senses. Locke lays great stress on the share of the senses in the acquiring of knowledge, and he quotes with high approval a saying that has rung down the ages among the philosophers: "There is nothing in the mind that was not first in the senses." Who said it first no one can now say, but it went at least as far back as our old friend William of Occam.

Because of his paper-and-sensation metaphor, Locke is often called a sensationalist. But we need not quarrel about mere names. The important matter is what Locke himself believed. Later philosophers and psychologists seem to have got beyond the purely passive stage of the sheet of paper. They are inclined to give the mind a little more to do in the matter of acquiring knowledge than is represented by the blank sheet of paper that does precisely nothing. A metaphor may be suggested that will indicate a step along the road of progress toward an active mind.

You probably have come across those curious notebooks with prepared paper that can be written upon by a piece of silver. In using such books, if you happen to have no pencil by you, all you have to do is to fish a silver coin out of your pocket and you can write with it on the prepared pages; and the mind may not unfairly be compared to such a notebook.

This metaphor can be improved upon by substituting for the notebook a sensitized plate about to be used by the photographer. Here we have the sensitized plate, the sun, and the object that is to be photographed. Each of these plays its part in the process of photographing, and the whole process may not unfairly be compared to the process of acquiring knowledge. The mind corresponds to the sensitized plate, the sun to the forces that act upon the mind, and the object to be photographed to the matter that is to be communicated to the mind. This is an up-to-date metaphor and has no historical background, but it marks a distinct advance on the Lockian blank sheet of paper. But neither of them is in the same category as the next metaphor, which is historical and is usually associated with the German philosopher Friedrich Froebel, but has been used by others both before and after his time. For people were not long in seeing its good points as soon as they began to look in earnest for a metaphor that would really work.

This metaphor is that of the plant. The mind is compared to a plant, and the treatment it receives is to be determined according to what the metaphor suggests. Froebel's bias was toward education, but he was none the less a psychologist. His bias showed itself in the application he made of his philosophical and psychological knowledge. It was he who set in motion that type of infants' school known as the kindergarten. A great many people have the idea that a kindergarten is a rather pleasant school for very young children, and that it must have a garden, hence the name. All this is right enough, except the explanation of the meaning of the name. Almost invariably a kindergarten school has a garden attached to it, but this is not of the essence of the matter. All that is required is the school and the children. For the whole name is a metaphor; the school is the garden, and the children are the plants. The kindergarten to which actual children go is the realization of Froebel's metaphor.

The application of the plant metaphor to the psyche is an enormous advance on the blank paper and notebook metaphors, for they, after all, deal only with dead matter. The plant is an organism as is the child himself, so when we compare the mind to a plant we are dealing with elements that belong to the same class. We are no longer dealing with elements that belong to different categories in the universe. The result is that in dealing with this metaphor we have fewer occasions to make allowances and to apologize for discrepancies.

A WARNING

Being prepared for the attitude to be taken up in this book with regard to metaphors, we may finish up this chapter with a warning about a metaphor that plays a rather prominent part in what follows. It is used as a sort of stage that provides a local habitation for ideas. I like to figure consciousness as a sort of dome into which ideas enter every time that we become aware of them. If we take any dome, say that of the Capitol at Washington or St. Paul's in London, and trace out the base of it, we find that it gives us a circle, and the corresponding circle that we may imagine drawn round the base of the dome of consciousness we may call the *threshold of consciousness*. This term is of common use in psychology, and is therefore not a new metaphor, though the dome is. By connecting it with the dignified dome we give the threshold a certain added vividness. All below the threshold is the realm of the unconscious. At any given moment all our ideas are either above the threshold and therefore within the dome, or below the threshold and therefore in the outer darkness of the unconscious—though to be sure there may be one or two, as we shall find later, that may for the moment have to occupy the undignified position of wobbling just *on* the threshold. It is clear that in speaking in this way we are preparing to deal with the ideas as personifications, and by and by we shall deal with them as such. But in the meantime the important point is to make our position clear with regard to the figure of the dome and the personification of the ideas. It goes without saying that there is no literal dome anywhere in the realm of psychology, but so strong is the human tendency to cling to the concrete that quite a number of people to whom, in lectures, I have presented this metaphor have gone away with the impression that the dome is the skull, and that when I spoke of ideas moving up and down within the dome I meant that multipolar cells were moving up and down amid the gray matter of the brain.

An old philosopher has said that ideas are living creatures having hands and feet. I find this a dangerous figure to use with students, as they are very glad to have it and are inclined to use it unmercifully. They take it literally, and it is often the most prominent thing in their examination papers, indicating that it alone has survived as part of the metaphorical flotsam and jetsam that mark the place where ideas of some importance have gone down. What the figure legitimately emphasizes, naturally, is the activity of ideas, and it can be used very effectively in dealing with the various forms of what is called *association;* but the moment it is taken literally it clogs thinking instead of aiding it.

We have now boxed the compass of the addition of unnecessary elements in our thinking. Old William of Occam had in mind the superfluity of elements in actual thinking. In our time we are more concerned about the introduction of misleading illustrations. Metaphors are the entities that we are to-day tempted to multiply beyond necessity. This must account for the amount of space we have given to, and the emphasis we have laid on, the value and the dangers of metaphorical work in psychology. Since we cannot get rid of the figurative, it is our business to use it in the most effective way, and to keep continually on the alert to warn readers of the dangers of the figures of speech that we cannot all the same avoid using.

CHAPTER IV

THE GREAT MYSTERY

Subjective and Objective—The Ego and the Non-Ego—The Split Ego—Personality, Individuality and Character—The Ego Is Bipolar—Introspection as a Method—Our Permanent Guest, the Ego—The Outer World and the Ego—Selfishness

"SAYS I to myself, says I," if not a very elegant expression, would seem to be a quite innocent one. It has passed into popular use and has indeed found its way to the Gilbert and Sullivan stage as the refrain of a popular comic song. It would appear that nothing on earth could be more remote from philosophic subtlety than these half a dozen simple words, yet an examination of the meaning they convey introduces perhaps the most baffling problem in human experience. We begin by putting to ourselves the simple questions, "Who is *I?*", "Who is *myself?*" "What is the relation between *I* and *myself?*" In an opera hall, naturally, no such questions occur; the refrain is accepted at its face value.

But if you set a teacher of grammar to work upon them with his class of fourteen-year-old boys you will find confusion at once rampant. The master wants to know which is talking—*I* or *myself*. The pupils assure him that *I* is the talker. Then of course the inference is that *myself* is the listener, but out of this arises a difficulty, and the master asks how many people are there altogether. To this the astonished answer is given: "Just one, sir." The master, with an air of puzzledom, inquires: "Which one? *I* or *myself?*" When the pupils appear a bit doubtful the master proceeds to give a new illustration by referring to reflexive verbs, and taking the sentence: "John washes himself," asks: "Who does the washing?" and getting the satisfactory answer "John," proceeds to ask: "Then who does he wash?" Standing by itself the answer, "John," appears quite in order, but the boys are not altogether happy about it. Though they would not put it in that way, they see the difficulty of making John play at the same time the double part of wash*er* and wash*ee*. Some of the cleverer ones would almost suggest a division of labour, and say that one part of John washes another part, as when the right hand washes the left in the basin, or the hands wash the face.

At this point the master would probably take a step upward, pass from the physical to the psychic, and give the example, "John blamed himself." The problem would now take the form: "Which part of John blamed which other part?" This generally reduces the class to a troubled silence, and the boys are in an excellent mood to face the real problem. On one occasion, however, a boy was found who carried the argument a bit farther by suggesting that it might be John's head that blamed John's hand. Investigation showed that the idea had been suggested to the boy by a memory from his history lesson of the incident at the burning of Cranmer, when the archbishop at the stake stretched out his right hand into the flame, so that it might be burned first, because it had signed the shameful recantation of an earlier date. The point was an excellent one, and deserved (and received) praise, but it was not difficult to get the class to realize that we cannot allocate blame in this piece-meal fashion, and that the whole Cranmer was to blame for the signing of the paper, and not merely the hand that did the actual writing. The boys readily recognized that it takes the whole John to wash any part of him.

But the problem of *I* and *myself* remains unsolved. There does seem to be a pair of us, otherwise we could not talk to one another in this familiar way. Within what we usually call our personality there would appear to be two personalities sufficiently distinct from one another to be able to exchange views. Now for his own purposes the psychologist has introduced into his science a term to represent this thing called personality. For this term he has gone to grammar and borrowed the first person singular, that which is usually represented in English by the capital letter I. This pronoun having acquired a rather bad reputation, the psychologist does not care to use it in that blatant form, so he falls back upon the Latin equivalent, as most of us do when we want to speak politely about something we do not care to express in plain words. But (as we shall see in a moment) not much has been gained by representing the personality by the Latin *ego* instead of plain *I*. The grammarians tell us that the first person is the one that is speaking, the second is the person spoken to, and the third—about which we are not here concerned (it had its turn in Chapter II)—is the person or thing spoken about. In the familiar refrain that probably rings in the reader's mind as a result of pitiless drill in school we have: "The speaker, the hearer, and the subject of discourse."

Now in the refrain with which this chapter opens the first and second persons appear to be interchangeable, and the same individual seems to be first and second person at the same time. The ego should include only one person, and here it seems to include two.

SUBJECTIVE AND OBJECTIVE

Psychologists, and grammarians, too, for that matter, use two terms for the very purpose of dealing with this difficulty. These are *subjective* and *objective*. These terms do not quite correspond to the persons in grammar, for the third person is not considered separately in psychology. The second and third persons are thrown together as opposed to the first. *Subjective* certainly covers all that is usually included under the first person, but its use is not limited to the process of speaking. Anything that concerns a person, not merely his speech but his thoughts, his points of view, his qualities of every kind, so long as they are regarded from his own standpoint, are legitimately called *subjective*.

To illustrate. A man comes down to breakfast and complains about the ham and eggs. His wife finds them all right; his daughter sees nothing wrong with them. His schoolboy son takes a rather generous sample and finds them flawless. A lady guest, on being appealed to, votes with the majority. The man remains of his first opinion. The problem arises: Are the ham and eggs good or bad? Assuming that all the *dramatis personæ* are honest, the ham and eggs are both good and bad. To the man they are bad, to the others they are good. If now we look at things exclusively from the man's point of view, the ham and eggs are subjectively bad and objectively good. In the plainest terms they are in themselves good, though certain circumstances in the man's physical condition make them seem bad to him.

Another case. You take a walk with a friend on a summer's night, admiring the stars. You get enthusiastic about them, you even drop into poetry at their address. You and your friend compare notes about them, and agree in your admiration. In your enthusiasm you become careless and bump into a tree. Then you see other stars. These second stars are specifically yours. You and your neighbour can no longer compare notes about what you see. The new stars are subjective stars; those that roused your first admiration are objective.

If you care to press gently your eyeball on its upper part near the nose you will find that you see on the bottom lower field of vision in that eye a ring not unlike the "eye" in a peacock's feather. Physiologists call this a *phosphene*. Now this phosphene is purely subjective; it is specially and specifically yours, and nobody else can perceive it. We cannot exchange phosphenes. They are emphatically subjective.

THE EGO AND THE NON-EGO

Everything that forms part of the ego and is of its very nature is subjective; everything else is objective. If we were dealing with an ordinary affair the matter would end here and we would be quite safe within our distinctions. But in dealing with personality we are brought up against distinctions that defy absolute analysis and introduce trouble all along the line. Psychologists distinguish between ego and non-ego, and in a general way these correspond to the realms of the subjective and the objective. But when we look into the matter trouble arises. Broadly speaking, the ego includes the whole body-mind organism, everything outside of that is non-ego. All this is perfectly clear, and we need not take too seriously the puzzling quips made by ingenious students who put to their professors such problems as: "When I am paring my nails I am obviously removing a certain amount of matter that at the present moment is undoubtedly ego, and in a moment will be non-ego. Now just at the very instant before the piece of nail falls off, which is it, ego or non-ego?" Such quibbles can be met only in a quibbling way. The logical answer is that so long as the fragment of nail is still connected with the organism it is ego. The moment it is separated it is non-ego.

From the Tenth to the Fifteenth Century problems of this kind were treated seriously by the philosophers of that period, who flourished under the name of Schoolmen. William of Occam, you will remember, was one of them. But to-day we have no use for such childish refinements. Yet while we have no patience with hair splitting there is a rather practical question involved in the limitations of the ego. The tendency to-day is toward extending rather than restricting its range. For real, safe, logical work, the fool-proof arrangement is to limit the ego to the body-mind organism. The critics can then roar to their heart's content; we remain safe in our logical citadel. But we are not here worried about logical quibbling. We want to deal with our subject in such a way that it may be applied to real life. So we must run risks. Accordingly we may look with favour upon the suggestion of extending the range of the ego, though all the while we may retain, in the interests of clear exposition, the doctrine that the ego is in the last resort confined to the body-mind organism.

Some writers are willing to extend the range of the ego to include not merely the body but the clothes of the person, the room in which he lives, the books of which he is fond, the pipe he smokes. In other words they include the whole of the man's immediate environment. As soon as we look into this suggestion we find a difficulty with that term *immediate*. How much does it include? Where are we to draw the line? We are in fact brought up against the finger-nail problem, though in a less childish form. Yet the moment we begin to analyze the content of this theory we are brought up against the idea that underlies it—which is that whatever means a man has to express himself may be fairly included under the term *ego*. The introduction of the term *self* really extends the area within which it may be said that the individual makes his self manifest. In a certain important sense the ego extends its borders and takes possession of areas beyond the body-mind organism. The range of the ego may then be described as the area within which it makes its influence felt.

The distinction between the ego and the non-ego may then after all be regarded as coinciding with the distinction between the subjective and the objective. But this is true only in a broad general way, for the distinction between subjective and objective has to be carried over from the non-ego and applied within the ego itself. This of course is suggested by the trifling refrain with which this chapter begins. The *I,* who says, is subjective, the *myself,* who is addressed, is objective, and yet they are both included in the same ego, which, as a whole, is subjective in relation to the whole non-ego.

It is here that the mystery comes into the limelight. How can the ego be at the same time subjective and objective within its own borders? The first natural suggestion parallels the idea of the schoolboy that one part of John washes another part. It seems natural enough to say that one part of the ego acts upon another part. The part that is talking is the subjective part, and the part that is talked to is the objective. I had originally written "the part that is listening is the objective," but I made the change to soften, as much as possible, the suggestion that there are two different persons within the ego. The change suggests the alternative idea that we are dealing with two different aspects of the same ego that is one and indivisible—an active aspect and a passive. My desire embodied in this "aspect" suggestion was to explain the facts without endangering the quality of being one and indivisible. It is of the essence of the wholesome natural self that it should be a whole, not a thing of shreds and patches. Talking of the psyche, Aristotle tells us that it is "all in the whole and all in every part." This quality is of the utmost importance in all our dealings with the ego. Neither the body nor the psyche can carry on work departmentally. A cut finger affects not only the local tissues but the whole constitution. So any psychic experience does not limit its effects to the special psychic department to which it belongs, but extends its influence over the whole psychic realm.

THE SPLIT EGO

When we say that the ego is one and indivisible it will of course be understood that we are dealing with the normal healthy ego. We need not ignore the fact that there are cases of what is called divided personality, in which the ego appears to be broken up into fragments, and there seem to be two or more personalities in one ego, these personalities existing side by side independently, sometimes with a knowledge of each other's existence, sometimes in blissful ignorance of what is going on in the experience of others. Usually there are only two personalities in the split ego, but sometimes there are three, and in one almost incredible instance it was claimed that there were eight.

This famous case was in the hands of a well-known American psychologist, Dr. Morton Prince. The patient was a certain Miss Beauchamp, who began splitting up her ego. The first new personality acquired a world-wide notoriety among psychologists as Sally. After suffering awhile the vagaries of Sally, the psychologist found that she had added to the common stock certain other distracting fragments of personality within Miss Beauchamp's ego. This process went on till at the end the sorely pressed ego had to make room for no fewer than eight different personalities. Fortunately we are not called upon to maintain order among these eight quarrelsome fragments of personality. We have our own work to do in keeping ourselves clear among the terms we have used in describing the case. It will be noticed that we speak of two matters, the ego and the personality. But in the last resort these will be found to be the same, though viewed from a somewhat different standpoint.

Exercising the freedom of treatment claimed in this book—I see no reason why there should not be a psychological license to parallel the poetic—I take the liberty of interpolating here a paragraph on a sort of deliberate artistic breaking up of personality as used by some of our most original writers. The most notable example is R. L. Stevenson's *Dr. Jekyll and Mr. Hyde.* Here we have a split so complete that it involves a parallel pair of bodies to match the two parts of the psyche. The story is literally absurd, but so skilfully is it done that psychologists have taken it seriously, Dr. Morton Prince himself referring to it with respect. Sir J. M. Barrie has done the same sort of thing in a less grim way by his habit in his later years of supplying himself (as many imaginative young children do) with an invisible second self on whom he elfishly lays all the blame of the weird things the joint personality does. M'Connachie is the name given to this coöpted self, and capital is the use Sir James makes of this adjunct, who might, in the language of the automobile, be called a "spare personality."

The mention of this term *personality* brings us back to our muttons, for we have still to face the question of naming. The reader must have realized, even from our easy-going writing, that the ego and the psyche are one. We do not have an ego *and* a psyche. There is a slight difference in the meaning of the terms, inasmuch as we use the word *ego* when we wish to indicate that we are speaking from the recognized psychological viewpoint, whereas we prefer *psyche* when we speak as mere human beings. Throughout most of this book we shall use *psyche* as the opposite of our body, because we are dealing with our subject in a warm comfortable way, wherever we can manage it. But now and again technical psychological points will arise that refuse to live in the fireside atmosphere, and insist on being treated in the approved chilly terms. Then we fall back upon the frigid *ego.*

PERSONALITY, INDIVIDUALITY AND CHARACTER

But the word *personality* introduces a further complication. We have written above as if the ego were the bigger term, as if it were the container and personality were one of the things contained. But for all practical purposes the two terms may be used interchangeably, though of course there is a slightly different atmosphere about each. The ego is the personality regarded from the most abstract point of view; personality is the ego looked at in a more concrete way. It has more content than the bare ego. We cannot do better than turn to Dr. Morton Prince, himself a recognized authority in this field, and ask him point-blank what personality means. His reply is quite clear up to a certain point. He tells us:

> We may then define personality as the sum total of all the biological innate dispositions and tendencies of the individual, and all the acquired dispositions and systems of dispositions.

After that he wanders off into all manner of conditions and qualifications which would be out of place in a book with our title, and do not matter very much, anyway. The important thing is that all our inherited and acquired ways of thinking and acting make up a whole that is the personality.

Leaving out of account the more erudite terms of the professional psychologist and philosopher, we have three terms in ordinary use that are continually getting into each other's way. These are *personality, individuality,* and *character*. We say among ourselves that these three must not be interfered with from without; they are our own special concern, and we must be permitted to develop them in our own way and without any external pressure. The public in general, and parents in particular, have become of late uncommonly jealous of teachers' interference with these precious attributes of their pupils. Lately I heard a serious discussion at a meeting of teachers in a midwestern state in America, which showed me that teachers themselves are extremely sensitive on this point. The subject of debate was whether boys, while marching into their classes from the playground, should be required to keep time to the accompanying music. Many of those teachers maintained that no compulsion should be used lest it should injure the sacred individuality of the boys. This, of course, was merely silly. There is no compulsion needed to make a normal boy keep time to the music as he marches. To break step, so as not to keep time, demands a distinct effort. It involves not merely freedom from restraint but a revolt against the natural way in which a boy's individuality asserts itself.

Individuality indicates in the most crass form the separateness of the ego. After all, it represents nothing but separateness of a unity that cannot be split up, and really emphasizes the physiological aspect. Man as a human being is an individual in this sense that he is separate from every other individual, and cannot be broken up in any way without ceasing to be a perfect individual.

Character is more of an estimate of an individual. It should indicate moral evaluation. In actual life it usually does, though it must not be forgotten that it does not necessarily imply *good* character. The phrase "a man of character" usually does imply goodness as well as strength, but a "strong character" may be applied to a highly reprehensible individual.

When a man is called a "regular character" the phrase impinges on the domain of personality proper. For in this term, *personality,* we find a combination of individuality and picturesqueness. The meaning of the term is to some extent to be gathered from its etymology. In the ancient open-air theatres of classical times the audiences were so large that the unaided voice was unable to make itself heard by all the people. Accordingly, artificial aid was required. It would hardly have done to supply the heroes with plain speaking trumpets, so a compromise was effected by using masks which were contrived, as Goldsmith might have said, "a double part to play." For they not only functioned as megaphones but served to indicate the rôle that the actor was playing. In these old times they had not the great number of characters in a play that we have to-day. Three was the usual maximum number of important characters on the stage at a time. Accordingly it was easier then than now to "duplicate" parts. But when an actor played two parts in the same play it was necessary that the audience should know which person he was on each appearance on the stage. Here the mask came in patly. One mask might represent Ajax and another Zeus, so that the audience had no difficulty in knowing when the hero appeared and when the god. The name of the mask in Latin is *persona,* so it will be seen that the megaphone function was the more important in the minds of the old classical actors. (The derivation of the word is given as *per*=through, and *sono*=I sound.) But the identification value is the one that has survived to the present day in the words *person* and *personality.*

While it is interesting and useful to have these side lights on the popular terms it is probably wise, so long as we are working on the somewhat technical side of psychology, to keep to the term *ego.* As soon as we get our present trouble over we shall revert to the kindlier *psyche.* But though we are still kept to the chilled term, we have at any rate the comfort that we are at least dealing with a normal, wholesome ego. All these split-up specimens we have been glancing at are pathological, and we can, with a good conscience, hand them over to the ego-doctors, commonly called by an appropriately chilled name—psychiatrists.

We are entitled to regard the normal ego as an organic whole, and we cannot assume it to fall spasmodically into parts in such a way as to explain the steady interaction that we know to be going on between the subjective and the objective in our ordinary experience.

THE EGO IS BIPOLAR

The problem may be faced by using a figure, and speaking of the normal ego as being bipolar, just as a magnet is. At any given moment a magnet may be said to be bipolar, since its activity consists in the reaction of two forces, usually called north and south magnetism. But the figure breaks down badly when we compare the two spheres, represented by the ego and the magnet. In magnetism we can actually separate the two forces, and even while they exist together in the same bar of steel we can use now the one and now the other. The two always retain the same relation to one another, the one never passes into the other. There is here all the difference between the mechanical and the organic:

in the magnet we are dealing with matter, in the ego we are dealing with spirit.

Yet it is worth while keeping the figure of polarity in psychology, even though the centre of polarity is constantly shifting and we have to keep continually reminding ourselves that we are dealing with a figure of speech. Even in magnetism there is something that we cannot explain. We do not yet know the nature of the force that we represent by that name. But we not only know with some accuracy how the force works, but we see nothing to hinder our reaching in due course a full and true knowledge of its nature. With the bipolarity within the ego matters are different. How the ego can be at the same time observer and the thing observed is beyond us, and must forever remain so. The problem of the ultimate nature of the ego passes beyond the sphere of psychology and falls under the study known as metaphysics, whose business it is to explain the nature of things in general, and in particular to explain origins.

Those old Schoolmen to whom we have already referred as discussing with great seriousness certain finicky points of no practical importance had a great deal of difficulty in making their philosophical opinions agree with the doctrines of the Church. They were really in a very tight place; for of course the Church must be right and yet their training in the exact ways of logic gave them a certain faith in the results of their own thinking. When things got desperate they escaped from their serious difficulties by setting aside certain very important matters in which logic and the Church did not agree and calling these matters *mysteries*. The idea was that these mysteries were beyond the reach of the human intellect and yet were quite intelligible to God, in whose clearer vision the contradictions were easily reconciled. We cannot do better than remit this problem of the dynamic interchange between the subjective and the objective to the realm of mysteries. But this does not mean that we cannot study intelligently the workings of the ego, though we cannot supply an intelligent account of its fundamental nature. Further, there is no inconsistency between the workings of the psyche and the ordinary laws of nature as known to us.

The old Schoolmen were oppressed by the weight of the authority of the Church; we have no such burden laid upon us in connection with the mystery of the ego. We do not have to believe in the working of the two poles within the ego merely because somebody has told us of them. We do not need to depend upon authority. We know them by actual experience. We can observe the interaction going on within. We can—*pace* the behaviourists—turn the psyche back upon itself and examine it by the process that we call introspection. We are at the same time examiner and examinee. The bipolar activity is going on in the daily life of every intelligent person. The old Puritan divines were continually urging their flocks to examine themselves with regard to their moral and religious state. This self-examination supplies an admirable illustration of the working of the bipolar activity.

INTROSPECTION AS A METHOD

This severe self-examination from the religious standpoint is still being vigorously carried on throughout the world, and is urged by many clergymen. But we do not need to poach on the territory of the Church, for a whole branch of psychological investigation is based on the working of this bipolar activity. A great deal of our knowledge of psychology is acquired by the investigation of our own psychic processes. This mode of acquiring knowledge of ourselves by direct introspection, or looking within, is, we know, regarded with suspicion by many of our modern psychologists who are inclined to pin their faith to brass instruments and to the external observation of the actions of others. But from the very nature of the case introspection is the only method of direct observation of what goes on within the psyche. No doubt there are certain dangers in this introspection.

To begin with, there is the obvious danger of bias in our investigations. We are all tempted to take a favourable view of our own activities. This does not mean necessarily that we deliberately take a too favourable view of our own psychic processes but merely that where we ourselves are concerned there is a tendency to a biased judgment. It may be in our own favour—no doubt this is the prevailing tendency—but it may take the opposite direction. It sometimes happens that in our desire to be quite fair we develop a bias against ourselves. Besides, there is the sentimental tendency to overstate our share in the general charge against humanity implied in the phrase "total depravity." This is illustrated in the lines attributed to Thomson of *The City of Dreadful Night* fame:

Once in a saintly passion
I cried in desp'rate grief,
"O Lord, my heart is full of guile;
Of sinners I am chief!"

Then stooped my guardian angel,
And whispered from behind:
"Vanity, my little man,
You're nothing of the kind."

The truth of course is that a bias in either direction—for or against ourselves—is to be deprecated, and the getting rid of a tendency toward bias forms a great part of the preliminary training that is regarded as an essential qualification for accurate introspection.

The general suspicion of introspection demonstrates the transfer of the bad reputation of the word *self* to its Latin equivalent; for we find that the term *ego* has acquired almost as bad a reputation as that attached to *self*. It is true that some people would like to rehabilitate the ego to some extent by giving a respectable meaning to the adjective *egoistic,* making it stand for a particular school of philosophy, while all the disagreeable suggestions of selfishness are allowed to gather round the adjective *egotistic*. But this kindly distinction between the philosophical and the popular forms of the adjective can hardly be maintained. The letter *t* is not allowed to make all that difference, and the bad odour of the ego spreads over into both forms of the adjective. They are treated by the general public as if they were synonymous. That this is not the attitude merely of commonplace and careless folk is proved by the example of one of the most brilliant English novelists, George Meredith, who entitled perhaps his most famous work *The Egoist*. In that novel the man who plays the title rôle, Sir Willoughby Patterne, is a typical egotist in every sense of the term. The absence of the *t* does not save him.

So intense is the dislike of the ego and all the disagreeable attributes it suggests that many people would like to get rid of it altogether, the thing as well as the name. This desire to eliminate a disagreeable element in human nature is quite natural, and in the case of the plain man quite pardonable. But when we come to those who assume a scientific and indeed philosophic background for their thinking we cannot be quite so easy-going.

We have seen that even such a clear and honest writer as T. H. Huxley thinks he can get along without this troublesome entity called the ego. He has an almost personal grudge against it, and calls it names. He regards it as a fifth wheel in the coach of psychic experience, doing no real service and only complicating matters. In the process of acquiring knowledge, he tells us: "There are the sensigenous object, the sensitive subject, and that masterful entity the ego." At any rate this is what the philosophers say, according to Huxley. His own view is that in this trilogy there is a superfluous element. The masterful entity may be quite comfortably omitted. With the chill off, "sensigenous object" means no more than any object, say an orange (in my student days psychologists were inordinately fond of oranges—they were continually using this fruit as an illustration: their favourite refrain seemed to be, "Now, take an orange,") that has the power of exciting any of our senses. As the object has the power of stimulating the senses, so the subject has senses that are capable of being stimulated. As the orange has the power of producing sensations it is called *sensigenous* (which means literally "sensation-producing"), so the subject concerned is called sensitive because he is so constituted that he responds to the sense-producing powers of the orange. Huxley is quite content with this tête-à-tête between subject and object, between you and the orange. There is no special need for the introduction of a third party, "Two is company."

OUR PERMANENT GUEST, THE EGO

But the masterful entity is not so easily ousted as all that. He is present at every meeting of subject and object, however privately they think they have come together. He is in fact a part of the subject, an essential part. Indeed the subject is only another name for the masterful entity. Notice that it is Huxley himself who introduces the ego as a third party in the knowledge process. The psychologist is quite willing to accept the tête-à-tête arrangement. Subject and object are quite enough for him. The only point of difference is the content of the subject. The psychologists as a body attribute to the subject certain unique qualities that Huxley does not recognize, and that a minority of psychologists regard with extreme suspicion. In the last resort, the unbiased outsider inclines to the side of those who believe in the masterful entity. Not that he troubles his head about the matter at all, but when the question is put to him he is inclined to believe that he has a self or a soul, that there is something within him different from and superior to his body. If you begin talking to him of a masterful entity he becomes suspicious, if you go on to introduce the term *ego* he loses interest and wants to change the subject. All the same, having no pet philosophical theory, he has no motive impelling him to get rid of his ego, and if Huxley, or some other writer, puts doubts into his mind, he finds that he cannot get rid of the belief that he has within him something that fits in with what he understands philosophers to mean when they talk about the ego. Parodying the poet Arthur Clough, he

Inclines to think the ego is
Or something very like it.

Even sophisticated philosophers find a difficulty in getting away from the ego. Descartes (since this philosopher must make his appearance in any book on psychic matters that claims the slightest degree of respectability, he may as well make his bow at this early stage), in his attempt to doubt everything about which he could doubt, came at last to one fundamental fact that he could not doubt. He could not doubt that he did doubt; he could not doubt that he was thinking. So he put forth his famous argument for which professors are as grateful as their students are resentful: *I think, therefore I am.* The English form is more suitable for our purpose than the Latin *Cogito ergo sum,* since the Latin idiom omits the pronoun. If we may be permitted to take the ghastly liberty of introducing the pronouns the saying would run *Ego cogito ergo ego sum,* which gives us a literal argument in favour of the existence of the ego. To be sure, Descartes was not thinking of the ego in the technical sense of the term, but all the same the entity that he thinks he has proved to exist is this ego that we are considering. Neither plain man nor philosopher can escape from this masterful entity. We may escape from this conception of it or from that. We may clear away all manner of apparently indispensable but really subsidiary elements. But in the last resort we are, like Descartes, left in the company of the inevitable ego. Goethe sums up the matter in five words: *Dich kannst du nicht entfliehen.* In chilled phrase, *Thyself can'st thou not escape:* with the chill off, *We cannot get away from ourselves.*

The plain man may interject here in some surprise the remark that he feels no urgent necessity to get away from himself: he is perfectly satisfied as he is. But a little talk with him readily arouses the desire to see himself as he really is. When Burns wrote his famous lines

Oh wad some po'er the giftie gie us
To see oursel's as ithers see us!

he missed a great chance by omitting to add a supplementary supplication to the powers to give us the means of seeing ourselves as we really are. This omitted petition may be fairly called the psychologist's prayer, and if he is true to his craft the psychologist would be willing to buy with a great price an answer to his professional supplication. Even the plain man might be willing to make a "down payment" of considerable magnitude for this clear vision, though the answer to his prayer might be so little to his taste that he might possibly neglect the instalment payments. But leaving out moral evaluation and taking account only of knowledge, the plain man can be readily interested in finding out what manner of man he really is. We read in the Bible about the man who looks in a mirror, and then passes away and forgets what manner of man he was. But the plain man in ordinary life does not have the benefit of the mirror, at any rate, of a perfectly honest mirror. When he looks within with a sort of amateurish introspection he gets only a distorted reflection of what he really is. The inner mirror is either concave or convex in some degree. It is practically impossible to find a man with a perfectly plane internal mirror.

Leaving metaphor for a moment—we have seen that we can never get rid of it for long—we have to realize that not only can we not get rid of the ego, but we cannot escape from the ego influence. We are each one of us imprisoned within the realm of our own consciousness. Most of us are decently modest; probably we all think of ourselves more highly than we ought to think, but the majority of us try to keep the balance true between what we think of ourselves and what other people think of us. Yet, in spite of all our efforts after proportion, there is one huge piece of egotism in our ordinary experience that is as vast as it is inevitable. It is customary in America to poke good-humoured fun at a certain famous city on the Atlantic coast that is popularly supposed to have a good conceit of itself. When we hear people say that Boston is the hub of the universe we smile tolerantly. But when it is suggested that what is said of Boston in jest may be affirmed of each one of us in earnest we find food for serious reflection.

In all seriousness it may be said of every one of us that we are, each for himself, the centre of the universe. The German psychologist Hermann Lotze uses an illustrative figure of the spider's web to expound our relation to truth. We are like creatures captured in the web, and we understand the plan of the whole web with greater or less accuracy according as we are near to or remote from the web centre. From that centre alone is a true view to be had, and that centre belongs in the web to the spider, and in the universe to God. Obviously none of us can hope to reach the centre, nor can we expect to be able to regard things from that enviable angle that philosophers longingly speak of in Spinoza's phrase as *sub specie æternitatis.* But not only can we not view affairs *from the standpoint of eternity,* but we are limited even in the present to one special point of view determined by our own physical and spiritual dispositions, and by the special time and place conditions under which we live. As a metaphysical poet puts it, we are

Allied to all, yet none the less
Prisoned in separate consciousness.

Out of this prison there is no escape. Each ego may be regarded as a little island of consciousness lying with myriads of other islands on the great ocean of the unconscious. We egos can never interpenetrate, for consciousness is as impenetrable as matter. We can never enter into the experience of another ego. We may sympathize with one another, but we can never really share our actual experience with another. Our nearest and dearest lie outside our ego.

No doubt by a system of interpretation we may get some understanding of what is going on in the experience of others. By various modes of signalling we are able to suggest to our fellows what is going on in our own experience. Usually we are fairly successful in conveying what we want to convey, particularly when we use the most highly developed scheme of signalling, that is, language. No doubt even words often fail to convey the exact meaning we desire, and a disagreeable Frenchman had the wit to confuse us by remarking that language is given to us to conceal thought. Yet even his epigram is evidence of the real power of language, since it enables us to convey certain thoughts to the mind of another, even though this meaning is not the one that other is led to think it is. We return to this matter in Chapter VIII.

All this desire to communicate with others naturally emphasizes the inescapable egotism of our nature. So long as we study the ego by introspection we are working along purely subjective lines and accepting the position of our permanent imprisonment. But so soon as we begin to study other egos we are making an attempt at objective study, and at first sight it would appear as if we were succeeding. For here am I, and there is the other ego, clearly outside of me. I am able to draw certain conclusions from what I observe and therefore to come to some sort of opinion about what kind of fellow this outsider is. For the moment we seem to have escaped from our prison house. But reflection shows us that all our opinions about this outsider are based upon our interpretations of what our observation has brought before us. The better sort among us are genuinely anxious to get at the other person's point of view. But we can get at that point of view only by way of our own. After all, what we conclude is the other person's point of view is only our view of his view. We are still within our prison house.

The consolation is that this form of interpretation seems to work fairly well. There is a set of philosophers who adopt the following standard by which to judge of the value of a theory. They ask: Does it work? If the theory fits into the facts of life it is accepted; if not, it has to be modified till it does. These pragmatists, as they are called, have no particular cause of complaint against this self-contained ego. Our means of communicating with our fellows and our facilities of fitting means to ends in the world are sufficient. The world seems a workable world. Let us accept it.

But while we may rest content with the means of communication with our fellow egos there remains another aspect of our isolation that calls for attention. If we are irrevocably, each one of us, the centre of the universe, it is clear that we can never get beyond ourselves and get into direct touch with what is usually called the outer world. Sometimes it is called the real world, as if our version of that world was in some sense unreal. But real or unreal the world as known to us is the only world that we can know. For us there is no other world.

We shall deal later with the two worlds, the inner and the outer, in their relation to one another. In the meantime we have to consider merely the relation of the ego to this outside world that the plain man assumes to exist outside of and independent of himself. Suppose we come back to the psychologist's orange. There it lies on the table before me, outside of me and apparently quite independent of me. But how do I know that it is there? The obvious answer is that I see it, and, in the first part of a popular saying, "seeing is believing." If any further doubt is raised, the plain man goes forward, takes the orange in his hand, and quotes the second part of the saying: "And feeling's the naked truth." But touching is no more convincing in this case than seeing. Both are merely modes of being conscious. All that we know about the orange is the sum of the sensations it has caused to arise in our consciousness. We have only our sensations to prove that there is an orange there. The orange is a part of our experience, and that is all that we can say about it.

THE OUTER WORLD AND THE EGO

Without doubt, we all have a rather firm belief that there is a solid round object outside of us, and that it is there even when we are not looking at it or tasting it, or squeezing it, or smelling it. But if we are called upon to prove that there exists outside of our senses an object of this kind we are sorely put to it. The sane solution is to take the outer world for granted, and organize our impressions of that outer world in such a way as to make a consistent whole that may be compared with the consistent wholes that presumably are organized by our fellows.

The ultimate result is that the whole outer world resolves itself into the cause of our experiences. We and the outer world are one. We do not create that outer world in the literal sense of that word, but we do in the psychological sense. We create our experience by our reaction upon stimuli that we believe are supplied from without. In the last resort this resolves itself into an infinitely wider enlargement of the ego than even William James in his most expansive moments cared to demand. The outer world, so far as we know it, is really our extended ego.

Philosophers talk learnedly and irritatingly of what the plain man calls real things as "things in themselves." Two psychologists looking at the same orange lying on a table may agree that at that moment there are two subjective oranges present, one belonging to each of the psychologists, and in addition they believe that there is an objective orange lying on the table. This last is the orange-in-itself, apart altogether from the effect it produces in the experience of the two psychologists. But they may agree that neither of them can ever get at the orange-in-itself, though they may be able to behave intelligently in relation to this unapproachable orange-in-itself.

In a very real sense we carry about with us the whole universe so far as it has come within our experience. For each one of us is in a new sense of the old line: "Not one, but all the world's epitome." The physiologico-psychologist who tells us that the main function of our minds is to foster our conceit would gloat over this view if it came to his notice. It would seem to him such an excellent exemplification of his theme. What could be more outrageously conceited than to picture ourselves, each one of us, as ambulating epitomes of the universe, universes in miniature. And yet there is nothing conceited in the matter. The position is forced upon us. We have done our best to fight our way out of the meshes of our experience into the reality of the outer world, and have been baulked at every turn. We are shut up forever in the subjective prison of our own experience, and to understand even that experience we must put ourselves at the very centre of this subjective universe of ours.

SELFISHNESS

But this point of conceit is only one aspect of the criticism brought upon us by accepting the egocentric attitude. If we drop the term *subjective* and accept the less pleasant term *selfish,* we produce a quite different effect upon public opinion. We may say that it is inevitable that we should adopt a subjective attitude toward life in general, and no great objection is raised, though certain philosophers have often a good deal to say on the subject, since they see the ultimate philosophic effect of such a concession. But when it comes to what is called a selfish attitude there is a vigorous protest. When the philosopher says that we must all, whether we will or no, adopt a subjective attitude toward life we may agree with perfect calmness; but if the matter is put in such a way as to imply that a *selfish* attitude is the only one we can take up, there is sharp criticism.

Even in circumstances as they are, certain dangerous ideas are generated by the use of popular words with an underlying, and false, psychological meaning. Children are often said to be more selfish than grown-ups, and the charitable explanation is that their limited experience does not enable them to get at a sufficiently wide understanding of all the circumstances of cases where the interests of others are involved. Both fact and explanation may stand, but there is another kind of selfishness among children that is not so easily disposed of. There is often a struggle for supremacy between the children and grown-ups. The child wants to act in one way, the grown-ups want him to act in another. In a downright struggle the grown-ups usually win, and they are apt to complain of the self-will and even selfishness of the juniors. But in many cases the defeated child may have the right on his side.

To "stay put" is a grown-up ideal for children. There are cases when children ought to stay put; but there are many others in which the child's resistance to staying put is wholesome. Grown-ups are apt to forget that the restlessness of children is Nature's protection against grown-ups—particularly teachers. Americans have another phrase not so pretty as "stay put," but equally dangerous. This is "stand pat," and signifies that attitude of stubborn adherence to any position taken up quite irrespective of whatever arguments can be brought forward against that position. If the old-fashioned type of teacher had his way all his pupils would be good "stay-putters" at school, and troublesome "standpatters" in their after life. In the newer schools allowance is made for the free development of both egoisms, teachers' and pupils'.

While we have been working up a case for many aspects of what is often disagreeably named selfishness, and have shown that whether we will or no we are all self-centred, we must be on our guard against confounding the wholesome with the unwholesome. We have to admit that all our experience is necessarily self-centred, and that without sin. Yet the word is nearly always used in a reproachful way. Nobody has a word to say for the self-centred person. Emphasis is laid upon the unwholesome aspect. *Egocentric* is a less use-worn word, and in the meantime carries no moral reproach, but has all the neutrality of a technical term. It may accordingly be used for that inevitable self-centredness that we have recognized. But when it passes beyond the normal stage and becomes excessive it gets to be a disease. Accordingly, it becomes necessary to have a new word for this aspect of a psychological state that has gone wrong. Common experience informs the plain man that a great many diseases end in -itis. Accordingly, when egocentricism goes to excess and becomes pathological it may conveniently be called *egocentritis.*

It is this particularly loathsome form of disease that has brought such disrepute on the normal psychological processes that are of the very essence of wholesome living. The word *self* is inherently a decent enough word, yet it has gathered round it a vile connotation. If you take a dictionary and run down the list of compounds which include the word *self* you will find the vast majority of them have an unpleasant atmosphere. *Self-abasement, self-control, self-realization* give a tinge of respectability to a rabble of words that no right-minded person would care to have applied to him. It is the man who suffers from egocentritis that figures in all the gibes at *self* in literature. That "wretch concentred all in self" is Sir Walter Scott's description of the unpatriotic sufferer from egocentritis, and Burns gives a very effective indication of the disease in his lines:

But human nature's unca weak,
And little to be trusted.
If self the quivering balance shake,
'Tis seldom right adjusted.

It is only fair to note that in all such cases we are dealing with a corrupt form of the connotation of the word *self*. It is used really as a question-begging term, a kind of moral invective. The self must always shake the quivering balance: that is its business. Only in morbid cases, when in fact we are suffering from egocentritis, need we adopt the condemnatory attitude usually associated in the popular mind with self and its derivatives and compounds. All the same, so tainted have these terms become, we shall probably be wise in dropping the term *self* altogether when we speak of the ego in a wholesome connection, and fall back upon the word *subjective,* leaving the Saxon form for occasions when we are deliberately dealing with morbid aspects of the ego.

CHAPTER V

THE PSYCHIC NETHER REGIONS

The Psycho-Analysts—Herbart as a Precursor of Freud—Complexes and Phobias—The Unconscious—Suppressed Desires—The Herbartian View of Ideas—The Laws for Ideas—Herbart's Classification of Ideas—How Ideas Are Recalled—Below the Threshold—Psychic Force—A Typical Psycho-Analyst's Den—Word Association—Idea and Concept Defined

Consciousness we have seen to be the storm centre of psychological controversy. If we cannot even define it, and if certain psychologists propose to eliminate it altogether from their consideration, there does seem to be something hopeless about the proposal to make *un*consciousness the centre round which all psychological phenomena may be arranged. No doubt it is found by those who make a careful study of exposition that it is often an excellent device to approach a difficult term by dealing with its corresponding negative. We can often make clear what a thing is by showing what it is not. But this indirect way of getting at the meaning of consciousness does not seem to be in the mind of those who make unconsciousness the basis of their study of the psyche. They seem to want to study the unconscious as such.

Sometimes the unconscious is approached from the philosophical rather than from the psychological standpoint, as in the case of a notable book by Edouard von Hartmann, entitled *The Philosophy of the Unconscious*. But this aspect does not particularly concern us here in spite of great success and many editions. We are interested primarily in the psychological aspects. For long psychologists were content to deal with the processes that go on within consciousness; and had little enough success in that domain, without attempting to carry on their investigations where consciousness is not. To fall back upon our figure of the dome, they were content to pursue their studies above the threshold and leave the region below to its own devices. It was held to be out of bounds, a happy hunting ground for poets and other imaginative people.

THE PSYCHO-ANALYSTS

But of late we have been hearing a great deal about the unconscious, and that in rather a practical way. A new body, calling themselves psycho-analysts, has arisen, and its members claim to know a great deal about what goes on in unconsciousness. Their job is a hard one. It is difficult enough to give an account of what takes place within the dome, but when we dip below the threshold we seem to get out of our depth entirely. We appear to have no data at all. When the light of consciousness goes out we are indeed in the dark. But these daring philosophers keep their courage up and maintain that they have discovered means of finding out what goes on below the threshold. It is because of this claim that they are called psycho-analysts.

It is well to keep this in view, for the name is often used loosely, as if it designated a school of philosophy, as if, in fact, it stood for a body of thinkers who had elaborated a system of philosophy founded on the unconscious. As a matter of fact, their scheme is not a philosophy of any kind but a method, the method of exploring the unconscious. They claim to be able to do a great deal for people who get into trouble by certain disturbances set up within their unconsciousness. It is admitted that there are disturbances that occur in the mental working of people. These are known in a vague way as mental aberrations. They are of varying degrees of intensity, from the irritating but harmless forms of eccentricity to which many people are subject, up to the hideous forms of insanity that lead to homicide. We do not know too much about these aberrations in their various degrees so the help of the psycho-analysts is not unwelcome, and medical men are willing to give them every encouragement to develop the new method in the interests of the treatment of mental troubles. Lawyers, too, are not disinclined to look into psycho-analytic methods to see whether criminal court cases may not be able to benefit by them. Even teachers sometimes get up sufficient interest to look into the methods, but their leaders are not willing to encourage them to make any practical use of psycho-analysis, though they admit that teachers would be none the worse of knowing all that the psycho-analysts can teach them—the point made by the experts in the theory of education being that teachers should know when to hand over pupils to specialists in mental trouble.

The arch psycho-analyst is Dr. Sigmund Freud, a physician of Vienna. He is usually regarded as the fount and origin of the whole system. But though he is certainly its most outstanding exponent he is by no means its originator. It is not to be supposed that all of the skilful men who manipulated human nature down the centuries were ignorant of some form or other of psycho-analysis. Frequenters of the dangerous old royal and princely courts where a false step might at any moment involve loss of favour and head, diplomats whose whole business consisted in finding out what other people actually thought, and concealing their own real opinions, and adventurers who took their lives in their hands when they visited strange lands all had at their command a more or less elaborate system of psycho-analysis. But leaving these generalities out of account, we have a distinct anticipator of Sigmund Freud, and that along his own lines.

HERBART AS A PRECURSOR OF FREUD

Johann Friedrich Herbart came into this world in 1776 and spent a long calm life in philosophizing. He was primarily in terested in ideas and their behaviour, and, being somewhat mathematically inclined, he set up a sort of dynamics of ideas and tried to elaborate a mechanistic system that explained how the ideas react upon each other. He did not use the figure of the dome but that metaphor will help us in understanding his scheme. We shall deal with that scheme in due course. In the meantime we have to emphasize the point that Herbart was driven to stress the activities of the ideas, and to establish a system according to which they acted upon one another in such a way as to make a rational life possible.

The important point at once emerged that ideas were not always in consciousness, and the natural problem followed: how did they behave themselves when they were not in consciousness? Where were they when they were not in the dome? This made imperative the finding of a home for the ideas when they were out of consciousness. Naturally they were below the threshold, but this did not seem a sufficiently definite habitat for them. The temptation was great to invent for them some sort of concrete home. But Herbart did not altogether yield to the natural temptation to hypostatize. He wielded Occam's razor with sufficient effect to prevent the creation of a subliminal region within which the ideas could disport themselves; but his whole thinking in the matter led him to assume something of the sort all the time.

When faced by this same problem Freud was not so successful in resisting the temptation. He did not actually describe a subliminal—you will not fail to note that this term means merely *under-the-threshold*—region, but he writes in such a way as to imply it, and in the working out of his theories he uses other metaphors, with which we shall deal later, that strengthen the conviction that he implied a definite region within which ideas were held in a sort of cold storage when they were not wanted above the threshold. There is no harm in this, so long as he uses it as a mere means of presentation, and there is every evidence that his hypostatization is innocent of any guile, and is a legitimate form of exposition.

There does not seem to be any evidence to show that Freud had ever read Herbart, so it would be very unfair to suggest that the medical practitioner of Vienna had in any way plagiarized from the Königsberg professor, but there is no doubt but that the Freudian and Herbartian treatment of ideas are so like one another that it might be possible for a reader of the two to think that the one was founded on the other. Curiously enough, a certain Freudian once wrote to me complimenting me on the closeness with which I brought out the resemblances between Herbart and Freud. As a matter of fact, this Freudian knew nothing about Herbart, and actually believed that Herbart was imitating Freud, the fact of course being that Herbart had passed into Valhalla long before the world ever heard of Freud.

The truth is that the world paid much less attention to Herbart than it did to Freud. Being only a philosopher, and an educational philosopher at that, Herbart did not attract anything like the same attention as Freud, who had the great advantage of being a "real doctor." People will listen to a medical doctor when they will pay little attention to a mere Doctor of Philosophy. Besides, Freud made a special point of sex, and sex is always an attractive subject for the general public. Living in a pleasure-loving capital, where morals were none too severe, Dr. Freud found that a great many of the patients who wended their way to his consulting room came there because of the results of sexual indiscretions. In dealing, and dealing very successfully, with this type of patient, he naturally acquired a sort of sex bias and became inclined to attribute the majority of his cases to this source.

We do not have to follow him in this particular. We are more concerned with the sort of diseases he had to treat, and to trace their connection with the psychology of the unconscious.

COMPLEXES AND PHOBIAS

Like Herbart, Dr. Freud found that he had to assume some sort of subliminal world in which ideas that were not wanted above the threshold could live the shadowy life that was possible for them. But with Freud there was no absolute quiescence among the ideas below the threshold. With him ideas have a bad habit of getting mixed up with one another in an objectionable way, with the result that they form unwholesome combinations that are apt to cause disturbance in the life of the person concerned. Herbart's ideas also had this habit of forming combinations and groups. In the early days of the application of his psychology these combinations were known by the repellent name of *apperception masses*. But ugly and clumsy as this name was, it carried no unpleasant associations. The Freudians were happier in their choice of names, for they called their combinations simply *complexes*. This better name, however, soon went wrong, for the Freudians were so keen on bad combinations of ideas that the term *complex* acquired a sinister association and came to mean *a disagreeable or dangerous group of ideas.* To-day *complex* is always used by the Freudians and, to tell the truth, by psychologists who are not Freudians, to indicate *a pathological group of ideas.* "To have a complex" came to mean *to have an unwholesome way of dealing with certain objects or incidents.* A particular way of sitting in a vehicle (facing the horses or back to the horses), a particular kind of vegetable, a certain day of the week, becomes intolerable and causes disturbance out of all proportion to the importance of the matter. Some horrible experience may so contaminate certain of the elements involved in it that the psyche cannot tolerate any reference to them.

For example a Belgian lady of my acquaintance could not bear to hear any reference to the word *Namur,* because the news of the fall of that city gave her the first appreciation of the seriousness of the Great War. This may be said to be a purely individual complex; others are more general and may be well illustrated by one that is very commonly used by the general public—the inferiority complex. This occurs not uncommonly among ordinary people in relation to certain persons in the presence of whom they feel an altogether unwarranted sense of inferiority. In prayer that attitude is quite reasonable; we are dealing with a personality before whom it is right and proper that we should feel humble. But the complex occurs in connection with people in the presence of whom there is no particular cause to be abased. The opposite morbid state, the superiority complex, is of exactly the same unwarranted kind and is more objectionable to the outsider, though the psyche affected by the malady rather enjoys it.

A special form of complex occurs when certain fears become prominent, and we have what the psycho-analysts call technically *phobias*. Many of these phobias have specific names representing common forms. *Claustraphobia* is the fear of closed places; those suffering from this form cannot bear being in closed places; they cannot travel by the underground railway; they cannot sit in a pew in church if the door be closed; even tight clothing becomes an abomination; the very idea of lying cramped up in a coffin becomes appalling; to be put in a straitwaistcoat would result in hysteria. *Agoraphobia* is just the opposite. Those who suffer from this form cannot abide wide spaces (*agora* is the Greek word for *the market place*); they would rather walk halfway round a public square than walk across it; they prefer narrow streets to broad. *Hydrophobia* means fear of water; *photophobia,* fear of light; *skotophobia,* fear of darkness; *borborophobia,* fear of dirt (leading to washing a score of times in a morning); *pyrophobia,* fear of fire; *thorubophobia,* fear of noise; *eremiaphobia,* fear of solitude. The well-known fear of cats, exemplified even in the case of distinguished soldiers like Napoleon and Lord Roberts, may be dignified with a learned name and called *ailourophobia.*

THE UNCONSCIOUS

All these complexes and phobias have their seat in the unconscious. They naturally interfere a great deal with the normal life of the victim. Indeed those who suffer from such abnormal combinations of ideas cannot be said to lead a wholesome life, and the investigation of their unconscious is quite necessary in order that something may be done to restore them to normality. It is worth noting that the usual phrase is "the unconscious," rather than "the unconsciousness." It is natural that the shorter form should be preferred, especially by those who have to use the word frequently. Indeed, this desire for brevity leads to a still further contraction, and the younger men who practise psycho-analysis are apt, among themselves, to speak of the "unc." This contraction serves the further end of personifying the unconsciousness. For it is obvious that we have here a specially suitable occasion for hypostatizing. One young psycho-analyst will say to another, "I see old Thomson wanted to reinstate his nephew in his will, but his *unc* wouldn't let him." We shall see later what this expression exactly implies. In the meantime it may be convenient to keep the term in view in order to avoid too much typing.

The *unc,* then, represents the region of the unconscious in the experience of the individual. It is not really a term dealing with a definite space, nor need it be always taken as a personification of a force. But it is a convenient term in carrying on a discussion of what is popularly known as psycho-analysis.

If the space element is prominent in our minds we may regard the *unc* as the whole area below the threshold, just as the dome stands for the whole area above the threshold. In this sense we have to compare the *unc* of the Herbartians with the *unc* of the psycho-analysts. The real difference is one of atmosphere rather than of content. So far as the individual units of content, the ideas, are concerned the two are pretty much alike, and I hope to show that the same set of principles of activity may be applied to both the Herbartian and the Freudian schemes. But the atmosphere in the two cases is certainly different. The Freudian *unc* is no doubt emphatically a sulphurous place. The ideas below the threshold need not necessarily be bad under the Freudian scheme. But the tendency among the Freudians is without doubt to paint the contents of the *unc* as objectionable.

It is not that the Freudians deliberately maintain that the complexes below the threshold are all bad. But their mode of dealing with complexes is to consider only those that need treatment in the medical sense of that term. The result is that not only has the word *complex* itself acquired a bad reputation, but that the whole contents of the *unc* come under the same condemnation. The ordinary medical psycho-analyst naturally does not penetrate into the *unc* unless in search of pathological elements. He does not, indeed, go to the Bible for reënforcements and say that "the heart is deceitful above all things and desperately wicked." He feels that he requires no help in his doleful work. There is no need to drag in the theological principle of total depravity. He practically takes that doctrine for granted. Since the applied side of psycho-analysis is naturally pathological it is only to be expected that those who practise it should acquire a jaundiced view of human nature. The psycho-analyst is inclined to approach his subject from the medical angle, and it is perhaps inevitable that he should people the *unc* with ideas of the most reprehensible kind. So long as we confine ourselves to the morbid we cannot but get a disagreeable view of the contents of the *unc*. One need not question the accuracy of what Freud and his school tell us of the ghastly things they have found below the threshold. But we must not forget that they are dealing with the psyche in a state of disease, and we must not carry over their findings to the region of the normal *unc*.

It cannot be denied that the plain wholesome man harbours in his *unc* a vast number of ideas of which he is ashamed, and he would be greatly disturbed if means were found to disclose these to the public gaze. Nothing could alarm society more than the discovery of a method by which the full content of the *unc* could be accurately laid bare. When the plain man hears about psycho-analysis he is pleased to learn that nobody can be properly psycho-analyzed without consent. But sometimes he is placed in circumstances in which those spectres of the *unc* begin to walk. He has an accident, or he is down with some sort of fever. In any case he becomes what is called "delirious," and out from the dens of the *unc* come all manner of distressing revelations. Some of them give rise to anxiety and resentment among his relatives out of all proportion to the real importance of these side lights on mental content. He may, for example, repeat frequently a woman's given name, and that not his wife's. But she need not worry about that, for the name probably dates far back in his youth, when there was no harm in thinking a good deal about a girl who did not happen to turn out to be the goal of his life. The chances are that the psychic force of this derelict girl's name is now very small, in fact so small that in his ordinary waking life of to-day the man would find it difficult, if not indeed impossible, to recall it. The recurrence of the name at this particular time is in all probability merely the result of a temporary mix-up of the psychic forces belonging to the different elements in the man's mental content.

Hospital doctors in the accident ward are quite accustomed to have decent well-bred girls use vile language when delirious, but the medicos are far too wise to draw unjust conclusions from the phenomenon. They know that it is impossible to go through this world without picking up objectionable expressions. It is an unattainable goal to be literally "unspotted from the world," though it is quite possible to be uncontaminated by it in the deeper sense. Every little child going along the street may see and hear things that he ought not to hear and see. These sights and sounds obtain a momentary place in the consciousness, and perhaps a permanent one in the *unc*. A child who lives in a good home and attends a good school has every chance of allowing these objectionable experiences to drop immediately into the *unc* and remain there permanently. To be sure these sleeping dogs are a constant source of danger. They may waken up under all sorts of unpleasant conditions, and cause serious trouble below, and afterward above, the threshold. It is worth while then to look into the behaviour of all the ideas within the *unc*.

The psycho-analysts are just as fond of figures of speech as the rest of us, and their exposition is often highly metaphorical. One of their favourite figures is the iceberg. As the huge mass of ice moves along showing above the water only from an eighth to a ninth part of its whole mass, it may typify the world of ideas of the individual human being. The part above the water may be held to represent the ideas at present in the consciousness of the individual; the water line may represent the threshold; and the mass of the berg under this line may stand for the ideas in the *unc*. The metaphor rather breaks down in the matter of proportion, for the seven eighths or the eight ninths of the berg below the water make a poor show when called upon to represent the millions of ideas that lurk in the *unc*. But the metaphor recovers its self-respect when the problem of forces claims illustration. Often the iceberg in the real world presents the surprising phenomenon of moving sedately in the teeth of the wind. The explanation is to be sought in the currents that flow beneath the surface. They are often more powerful than the surface wind and in any case the current has the enormous advantage of getting a much bigger target than the wind. So long as the great mass of the berg is subject to the pressure of the current, the wind above has little chance of making headway.

This may be used to illustrate what sometimes takes place in ordinary social life. A man comes down in the morning to breakfast, not feeling in particularly good form. His wife makes a remark of a perfectly inoffensive kind, and he snaps at her. No sooner has the thing happened than he wishes to unsnap. But somehow it cannot be done. The man would really like to make a remark that would be pleasantly apologetic. Something seems to prevent him. In the chilly language of the psychology textbooks he is *inhibited*. Something in his unconsciousness makes it difficult, if not indeed impossible, to say the kind thing that he feels it would be right to say. He is in the same position as old Thomson that the young doctor told his friends about, the one that wanted to put his nephew back in his will, but the *unc* would not let him.

A figure that gives the more pessimistic psycho-analysts a good deal of satisfaction is "the Titan within us." They figure it out that within each one of us there is a sleeping monster after the pattern of the Titans of classical mythology. He may lie quite peacefully for long periods at a time, but at intervals he will wake up and rend us. It may as well be admitted that we all do have Titans within us, but the psycho-analyst's error is to make all those Titans morose blackguards, who never waken out of their sleep save to make us miserable by driving us to do what brings us shame. It cannot be denied that they often do drive us in objectionable directions, and too often we seem unable to resist. But though on certain occasions we cannot put up a successful fight we can by careful training keep our Titans in order. They are partly of our own creation, and in any case are always amenable to training. *Titan drill* is not too flippant a term to cover a very valuable opportunity of keeping the *unc* out of mischief.

Some of the more pessimistic psycho-analysts would have us believe that below the threshold there is little else than a seething mass of corruption, a vile moral cesspool. But those of us who have not been depressed by too much work among abnormal folk do not take such a gloomy view. We have admitted that with the best of us there exist below the threshold many ideas of which we are ashamed, but we feel that not only are they below the threshold, but they are kept in their proper places there. They are not allowed to come to the surface of their own will. With regard to this keeping of objectionable ideas below the threshold psychologists differ a good deal in the views they adopt. The psycho-analyst group are particularly anxious to avoid any pressure, in case fresh complexes are set up.

SUPPRESSED DESIRES

Others are willing to allow a good deal of pressure, so long as it is properly applied. These sometimes discriminate between *repression* and *suppression* of ideas, and describe their relation in this way. They maintain that it is quite a good thing to thrust down into the unconscious all ideas of which we do not approve. This they call repression, and they would go on repressing these objectionable ideas, which in their turn keep bobbing up into the consciousness and have to be repressed anew. They say that the struggle may go on for a long time, but that if we keep up the fight and carry it on in a sufficiently skilful way the troublesome ideas get tired, gradually become discouraged, and finally sink down in the *unc* and give up the struggle. They are then said to be no longer merely repressed. They are *suppressed* and remain permanently beneath the threshold, their only chance of rising above it being the possible appearance of some idea with which they have made a previous connection, or the occurrence of some specially suitable set of circumstances.

The problem naturally arises: do these suppressed ideas exercise any influence to the hurt of the personality that is involved? The answer appears to be that they are a potential influence, but that so long as they remain quiescent they do no harm. They are more a threat than an actual source of trouble. Naturally, we have to keep an eye on these dangerous though quiescent elements. They may be compared to the various kinds of possibly hostile microscopic organisms which are to be found in our physical constitutions, and which, under certain conditions, can become active to our serious inconvenience. In our bodies we have various friendly microbes that can be turned onto the hostile ones when these become dangerous. As the doctor injects friendly microbes into the system to fight the hostile microbes he has discovered to be there, so we may instil wholesome ideas into ourselves or others when we find that unwholesome ideas are beginning to have too much of their own way. But this course is wise only when the microbes are up in arms and the sole way to subdue them is by open fight. Much the wiser plan, in both body and psyche, is to try to keep the whole organism in wholesome working order, and prevent the unwholesome microbes or concepts from acquiring a position of dangerous development,

Leaving the doctors to look after the microbes, we find full scope for our energies in attending to the ideas. What we want to do is obviously to increase the presentative activity of good ideas and diminish the presentative activity of bad ones. (By presentative activity we mean the power of forcing their way into the dome of consciousness.) But here a difficulty arises. We can easily increase the presentative activity of an idea. All we have to do is to bring it frequently into the dome and introduce it there to wholesome and powerful fellow ideas. But when we want to reduce its presentative activity we find ourselves in a difficult position. We cannot deliberately and positively diminish the presentative activity of an idea. In fact, in the very effort to effect this diminution we may actually increase it. When dwelling on the unwholesome idea with full purpose of and endeavour after the diminution of its power, we are offering it opportunities of establishing its position in the consciousness, of digging itself into the dome.

A frontal attack being unwise, a flank attack must be made. This is possible, for we are able to reduce the relative presentative activity, though its positive power is beyond our reach. Dr.

Chalmers, during what was called in Scotland "The Disruption," used a method that is useful here, and coined a phrase that happily embodies it. When his fellow Churchmen gave up kirk and manse and stipend for what they believed to be the cause of right and truth they not unnaturally felt their loss somewhat keenly. His advice was to look forward rather than backward, and to build a new Church so much finer than the old that regret would be swallowed up in the new glory. His encouraging phrase was that the leaving clergy and people must achieve success by "the expulsive power of a new affection."

So without changing the absolute presentative activity of an idea we can still exercise an expulsive power sufficient to get rid of it. The idea wants to remain in the dome all right, but by the pressure of other ideas whose power is deliberately increased by the psyche concerned it is quietly elbowed out of its place. All this suggests that it will be well worth our while to study the mechanism of those psychic units called ideas.

It is obvious that in so doing we are apt to incur the disapproval of the *Gestalt* psychologists who point out that in dealing with the separate units of psychic life we are apt to lose the meaning of both the units themselves and the psyche within which they have their being. Now it cannot be denied that the Herbartian system that we propose to outline is distinctly atomistic, but since we have been warned about the dangers of analysis it is possible to use this system without going wrong, so long as we keep a careful lookout for the snares that the *Gestalt* people fear. As a matter of fact, I propose to deal with the Herbartian scheme as a huge figure of speech; for in its essence it is nothing more. Like most figures it has a high expository value, and we need not commit ourselves to its literal implications.

THE HERBARTIAN VIEW OF IDEAS

The atom on which Herbart builds his system is the idea. Now a whole library has been written round this little word, and in spite of this spate of words, or maybe because of it, the world is not at all clear about its meaning. As a precaution, therefore, against misunderstanding, let us adopt some general definition that is widely accepted and use that as the standard from which to work. We want something that is not too learned, and yet is accurate enough to permit of clear thinking about it. Fortunately, such a definition is provided by a man whom we have already introduced, one of the most famous and highly respected psychologists in the world, John Locke. His definition runs: "Whatsoever is the object of the understanding when a man thinks." In still plainer terms, whatever a person thinks about is an idea.

When we come to Herbart we find the idea takes on a new character. The word he uses in German is *Vorstellung,* which means *a presentation.* At once we want to know to whom or what this thing is presented. Herbart explains that it is to the soul, by which he means the same thing as we have called the psyche. But Herbart's view of the psyche is different from Locke's. It is clear that "when a man thinks" he is actively employed; he is doing something. So it is implied that the psyche is active, and the ideas are regarded as passive. Locke, like the vast majority of psychologists, regards the psyche as something given, and the ideas as things produced by the psyche in its ordinary way of working. In other words, the problem seems to be: Given the psyche, find the ideas. But with Herbart matters appear to be almost inverted: Given the ideas, find the psyche. Of course he does not put it quite in that blunt way, but that is what it practically amounts to. With him the psyche has almost no power at all. I feel tempted to let you off the heart-rending experience of reading his own description; but perhaps it will be good for your soul to have just one glimpse of the sort of thing official students of psychology have to put up with. I shall not do it again.

The following is a translation of Herbart's description of the psyche. He says it

> . . . is therefore no *tabula rasa* [Locke's blank sheet of paper] in the sense that impressions foreign to its nature may be made on it: also it is no substance in Leibnitz's sense which includes original self-activity. It has originally neither ideas, nor feelings, nor desires; it knows nothing of

> itself and nothing of other things; further, within it lie no forms of intuition and thought, no laws of willing and acting; nor any sort of predisposition, however remote, to all these.
>
> The simple nature of the psyche is totally unknown, and forever remains so: it is as little a subject for speculative as for empirical psychology.

There! This is negative enough in all conscience: so negative indeed that we can afford to neglect it. The poor psyche is ruled out of court, and might be treated as all but non-existent. The only quality it has left is a sort of feeble form of what the physicists call *vis inertiæ,* the power of resisting change and of retaining any change that can be imposed upon it.

The law of compensation holds here as elsewhere. What Herbart has taken from the psyche he passes on to the ideas; but if we think he has given too little power to the psyche we are convinced that he has given too much to the ideas. The psyche is reduced to a sort of arena in which the ideas disport themselves as if they had a power of their own. We know, however, that whatever power an idea possesses it owes to the psyche; ideas have no existence apart from the psyche.

While we differ from Herbart in his distribution of power between the ideas and the psyche we need not reject his scheme of applying this power in psychic life. In his scheme ideas may be treated from two different standpoints—as *presented content* and as *presentative activity.* This second term we have already encountered, and we are aware that it means the power an idea has of presenting itself in the consciousness. In other words, ideas may be regarded either as forces (i. e. having presentative activity) or as mere passive content of the psyche. Once an idea has appeared in the mind it has a certain chance of coming back again, and the oftener it comes back into the dome the greater its chance of returning again, which is only another way of saying the greater its presentative activity.

All ideas that have once been in the dome may be regarded as forming a store of ideas that may be called upon as often as they are needed. So long as such ideas remain in storage they form part of the presented content of the psyche. They are like the furniture of a room, all placed ready to be used but having no power to come into action till called on by some change in circumstances. This is the view of the idea that gives rise to the phrase "mental content," which means all the available ideas at the disposal of a given psyche. Prof. G. Stanley Hall in America, and a number of investigators in Germany, made rather elaborate investigations into the mental content of various types of children—country children, town children, city children, children occupied in industrial, commercial, and agricultural pursuits—and found that their mental contents differed materially. Such researches are not confined to children and really resolve themselves into an investigation of the number and kind of ideas that enter into the experience of people in different walks in life and at different stages. But these ideas are regarded as inactive, like the books on the shelves of a library. This is obviously the static view of ideas.

But ideas may be treated from the active or dynamic side. As a matter of fact, experience does not picture them as standing side by side in this library-shelf style. They appear to be always in motion, and very swift motion at that. When we use the figure "with the rapidity of thought," we do not usually make a picture of ideas flitting about in the mind at lightning speed. We do not ordinarily *picture* ideas at all, when we speak of thought. But if we do picture ideas we certainly are apt to regard them as standing still. The reason is that our way of regarding ideas is as *forms* rather than as *forces.* Indeed the literal meaning of *idea* is just a *form,* and when Plato worked out a famous theory of ideas it is quite plain that his ideas were actual forms, with the result that his whole scheme was abortive, since there was no motive force to set it going. No theory of ideas can be practically applied unless force of some kind can be introduced into it.

Herbart made no bones about introducing his force. He held that ideas were not merely furniture of the mind, not merely presented content, but were also forces. In this aspect they were said to possess presentative activity, and therefore had a certain power of presenting themselves in the consciousness. Now this statement gives what appear to be the facts of the case. Ideas seem to acquire a power of their own in virtue of which they can thrust themselves into the consciousness, as it were, in their own right. At any period of our lives there are always certain ideas that have a great deal of presentative activity and are continually thrusting themselves into the consciousness, whether we will or no. Matters of deep interest to us keep rising above the threshold through a whole day, every time that the dome is left comparatively free. If at night you get a letter of vital importance to you—it may contain good news or bad news, it does not matter; since we have the choice let it be good news—it at once absorbs your attention. All through the rest of that night the contents of the letter assert their presentative activity by coming into the dome every time other matters will give them a chance. Next morning your first feeling is a sense of balmy pleasantness, without your knowing exactly why. Immediately the presentative activity of the letter brings it over the threshold. The cold plunge in the bath banishes it for the time, but all through the dressing period, with occasional irritating interruptions caused by tiny disturbances of routine, it keeps bobbing up, and this is carried on throughout the entire day.

Perhaps a disagreeable letter after all illustrates the point still better, for in this case there is a conflict between you and the idea. With the pleasant letter you welcome its appearance at all the available moments. With the disagreeable one you want to keep the wretched thing out of your consciousness as long as you can. You spend the day in inventing counter-attractions that will keep the hateful thing below the threshold. Its persistence in bobbing up in spite of you is an indication that it has a power of its own, and this is the essential point for our consideration. For the fact is that the presentative activity of an idea is not inherent in the idea but is communicated to it by the psyche. Indeed, in the last resort the idea itself owes to the psyche not only whatever presentative activity it possesses, but also its very existence. Ideas do not have a separate being, they are not real entities. Occam's razor shears them off the moment they claim to be independent entities. For expository purposes we are continually making use of ideas as if they were entities, but this is one of the occasions when it is necessary to warn ourselves that it is only metaphorically that ideas have an existence at all. With this promised warning let us get back to our exposition of the Herbartian scheme.

Every idea that has once been above the threshold has a chance of coming back into the dome. But some ideas that made very little impression on their first appearance have but small chance of coming back. These have the minimum amount of presentative activity and are much to be pitied, if we continue our metaphor—almost big enough now to be an allegory—and personify the ideas in relation to the dome. For every self-respecting idea wants to get into the dome. That is its natural home. So long as it is in the outer darkness it wanders about like the shade of Achilles and moans that it would rather live as a poor serf in the sunshine "than all the realms of the dead were mine." The only way in which an idea can get back into the dome is by making friends when it happens to be there. To be chilly for a moment by deserting metaphor we may say that co-presentation in consciousness is the one effective way of securing a return to the sunny side of the threshold.

THE LAWS FOR IDEAS

Figuratively speaking, ideas behave in the mind as human beings behave in society. They form cliques and coteries among themselves, and they help one another. In all probability ideas are more reliable in their relations to one another than are ordinary mortals. The moment an idea gets over the threshold its first impulse seems to be to drag up with it some idea that has been with it before in the sunny realm. Of course there may be a great crowd of ideas that have been with it before in consciousness, and a selection must be made among the various candidates for a leg-up over the threshold. It is here, naturally, that one would look for unfairness and favouritism. Often, no doubt, when an interested investigator gets an opportunity of examining what takes place on such occasions, it would appear as if the ideas were as capricious as humans in their choice of friends to favour. But wherever we have sufficient data it will probably be found that the ideas followed the natural laws of ideational intercourse.

The trouble is that we do not know these laws very well. Indeed we are only beginning to study them in a more or less scientific way. The study of the interaction of ideas is no new thing. It goes back at least as far as Aristotle, and in the Eighteenth and Nineteenth centuries its results were familiarly known as the Laws of the Association of Ideas. Three of these laws were universally recognized, and are as important to-day as they ever were, though they are being superseded by newer treatment at the hands of the configurationists, and other new psychologists.

The first of the old Laws is that of *Similarity*. Any idea presented to the mind has a tendency to call up the idea of something similar to it. The presentation of a llama may call up the idea of a camel; the sight of an ordinary pipe case suggests a pistol; a toadstool may suggest an umbrella, as the Englishman who knew no French found to his surprise when in answer to his drawing of a mushroom the restaurant waiter brought him an umbrella.

The second Law is that of *Contrast*. Reference to a giant is apt to recall the idea of a dwarf; great cold may suggest the idea of great heat; the sight of a starving beggar may suggest a guzzling alderman.

The third Law is that of *Contiguity*. It was often divided into two parts: contiguity in time and contiguity in space. If two people have been seen together the chance is that if afterward one of them is seen or mentioned, the idea of the other may come into the consciousness. It is quite clear that this law really depends on what we have called co-presentation in consciousness. Some say that the first two laws are different in kind from this third law, but in a way they are fundamentally the same. It is true that a giant and a dwarf may never have been co-presented in consciousness, but they form different aspects of one idea, the idea of size as applied to human beings. So with the Law of Similarity; when it is applied there is a reference to some quality that is possessed, to a certain degree at any rate, by the two ideas that are brought together. In recognition of such common elements some of the old psychologists tried to gather up all the laws of association into one—the Law of *Redintegration.* This meant that every application of the law implied the reconstruction of a whole that had formerly existed, and of which the suggesting idea formed a part. This would naturally include the Law of Contiguity, for whatever had been in the consciousness together would naturally form a part of the whole content of the dome at that time, though the items might not have formed a very well organized whole. The fact that all the ideas in the dome at a given moment form at any rate a temporary whole or unity is recognized by the name the psychologists give to the total dome-contents at any given moment. This name is a *continuum,* which naturally suggests an unbroken whole, although it must be admitted that in nearly every continuum there is a core of ideas that are united together in a central unity, while round the threshold of the dome there is often a fringe of ideas that have little connection with the core, save the fact that they are all together within the dome at the same moment.

Working on this general scheme, it was possible for the old psychologists to make a quite successful analysis of the interaction among the ideas. But such analyses had more a backward than a forward look. It was much easier for the associationist to explain why it was that certain combinations in the consciousness came about, than to prophesy which combinations were about to take place. It is true that before Associationism fell out of favour attempts were being made to extend it in such a way as to enable its exponents to look forward as well as backward.

Dr. Thomas Brown, in his *Philosophy of the Human Mind,* seeks to establish a set of secondary Laws of Association, and he has had many followers. The plan is to get certain other considerations beyond those of the primary laws, and consider whether we cannot manipulate them so as to be able to anticipate which direction the stream of consciousness is about to take, and (changing the metaphor) which ideas will accordingly be the most likely to be recalled to the dome. For example, the chance of any particular idea being recalled at any particular moment will depend on many considerations, the following supplying illustrations. First there is the *vividness* of the idea in itself, depending on how it was originally presented to the consciousness and the amount of interest it originally aroused. The higher up an idea is in the scale of human interests the greater its chance of coming into any mental combination that is being formed. But other considerations must be taken into account, for ideas that have little general interest for humanity at large may, on specific occasions, have unusual claims on our attention. Thus the *relevancy* of an idea to the subject in hand will give it a certain advantage over competitors with much higher intrinsic claims. So the *recency* with which an idea has been in the mind will have an influence in its struggle to get above the threshold. Suitability in tone to the sort of thought that is going on will also have an influence for or against the admission of a given idea. This *congruity* has a rather vague sound, as indeed have the other qualities set forth as affecting the chance of an idea to find its way into the consciousness at a given time. But they all suggest means by which we may be able to manipulate the ideas in the psyche.

There is no doubt that considerations of this sort have had a great deal to do with the development of the sort of mechanism of ideas that Herbart set up in his day, and these considerations have been worked up by the psycho-analysts on somewhat different lines. The two schemes are not at all in conflict with one another, and may be used side by side, or combined in a bigger and more complicated scheme. They differ no doubt in this particular, that Herbart works mainly from the cognitive side, the side that deals with knowledge; whereas the Freudians work mainly from the active side, the side that deals with conduct.

Here we are more or less suddenly brought up against a fundamental classification that must be faced sooner or later. So we may as well sit down by the roadside and thrash it out. We have a long way to go in this chapter yet, so we may with a good conscience take a rest from our main discussion to clear up a matter that has come naturally to us in the course of our journey.

Amid all their classification of the various elements with which they have to deal in their study, psychologists are pretty well agreed about a big threefold classification. All the different branches of the study can find a suitable place in one or other of three main sections. They are all matters of *knowing, feeling* or *willing.* In its chilled form psychology names these the *cognitive,* the *affective,* and the *conative* aspects. We need not use these terms here, but it is desirable that we should know what they mean, in order that if we come across them in ordinary reading—newspaper writers are getting uncomfortably fond of technical psychological terms—we may know how to behave intelligently toward them. The *affective* is the most troublesome of these; it is closely connected with the familiar term *affection,* but when used technically *affective* may be applied to hatred as well as to liking. It covers in fact all those aspects of experience that are associated with the emotions and the desires.

Some of the older psychologists used to keep the desires by themselves, and thus make a fourth great class: knowledge, feeling, *desire,* and will. But it was felt that this was an unnecessary complication, so desire was incorporated into the section of feeling.

Conation is sometimes called the active section, since it includes all our psychic states that involve action. Wherever we use our will we feel that we are in the conative section, and we warn ourselves that we must not confound it with the *cognitive,* though they both do begin with the letter *c.* Intelligent readers will not be angry with this apparently unnecessary warning when they are told that this confusion is not unknown even in university examination papers. Having made up our minds about this vital tripartite classification let us get up and move on.

At the stage at which we are now working the conative aspect may for the time be neglected. It will come in for treatment by and by, but in the meantime we cannot do better than keep to the cognitive side, and see what progress has been made in studying the interactions of the ideas at this level. Here Herbart has carried the matter farther than has Freud, though at the conative stages perhaps the distribution is reversed.

HERBART'S CLASSIFICATION OF IDEAS

The Herbartian classification of ideas is threefold. We have first what may be called *similar* ideas. This means that ideas of this class remain the same. Every time they come into the consciousness they are the same as they were on previous occasions. The taste of an orange is the same to-day as it was ten years ago, and if we keep in ordinary health it will be the same when we taste it ten years hence. *Disparate* ideas, on the other hand, have no resemblance to each other at all and have no inherent connection with one another. President Garfield and a log cabin have no connection with one another of a causal kind; they have no resemblance to one another. Yet in the popular mind they are inseparably connected because of the fact that this President began life in a log cabin. If you are to examine any case of ideas that are made up of parts that have no resemblance to one another and yet are so welded together that you can hardly think of the one without the other, you may say that the compound is made up of disparate ideas.

When we consider the interaction of the ideas we find that similar ideas act in quite a different way from that marking the disparate. Similar ideas *fuse* with one another, that is they merge into one another with the result that they strengthen the original idea.

In the case of disparate ideas what has happened is that various elements that have no direct connection with one another through their own nature are brought together through our experience in the outer world in such a way that they make up a more or less stable combination in the mind, with the result that they form a new whole of which they are indispensable parts. This process may be called *complication*. "The disparate ideas form a complex" would be a perfectly correct statement of the case, were it not that the word *complex* has acquired the displeasing suggestion that we have already noted.

There is still a third kind of ideas, a kind that is the most interesting of all. These are called *contrary* ideas. They are like one another inasmuch as they belong to the same class, and are unlike one another inasmuch as they differ within that class. Examples may be found in the notes of the scale, and in the colours of the spectrum. Starting with the colours, we may quite properly ask how contrary ideas act upon one another. They do not fuse like similar ideas; they do not form complications like disparate ideas. They do not go together at all; they resist one another; they fight. If one idea gets into the dome it does its best to bring in with it any disparate idea that has been joined to it by way of complication. The idea of Garfield will drag after it over the threshold the idea of the log cabin. But the idea of red will not drag in after it the idea of green. At first sight it would seem as if it would. We may remember having seen a lady with a scarlet coat and an emerald green skirt, and the sight of an emerald green skirt is apt to recall the scarlet coat. But this is not green recalling red but a green skirt recalling a red coat. Green skirts and red coats are disparate ideas and form a complication—in this case a rather loudly dressed lady. But red by itself and green by itself by no means recall each other into consciousness. So far from red welcoming green over the threshold and giving it a helping hand, it does all it can to thrust it back and keep it out.

We have to distinguish between *having* an idea and *realizing* an idea. We can have an idea of a geranium with its red petals and its green leaves, but that is not realizing either red or green, but merely a plant showing these colours. Suppose you try to realize in its full vividness the idea of green as such and at the same time try to realize red, you will find that the thing cannot be done. As soon as you have got a vivid realization of red you will find that your idea of green has become very faint, and, when the red is really vivid, green has disappeared altogether.

Those three processes, fusion, complication, and arrest have each their appropriate work in building up the mental content. Fusion produces vividness and strength, complication leads to richness, while arrest promotes clearness by paring off all unnecessary or opposing elements.

Assuming that these three processes, or something very like them, are at work in the building up and organizing of the mental content, we have to note that they are assumed to take place within the consciousness—above the threshold. The critic is very apt to ask at this stage: What about the region below the threshold? Here no doubt the psycho-analysts have done more work than the Herbartians, though these last were first in the field. It is worth while, before giving the psycho-analysts their innings, to allow the Herbartians to finish their contribution. They do not tell us very much about what the ideas do in the nether region, but they do study the mechanism by which ideas may pass from below the threshold into the happier regions of the consciousness.

HOW IDEAS ARE RECALLED

There are two ways in which an idea may pass from the *unc* into the dome. They may come back by means of *immediate* or *mediate* recall. This distinction demands the recognition of two kinds of preservation in the *unc*. Ideas there fall into two groups, those that have at the moment no effective presentative activity, and those that have. It may be assumed as a part of the theory that all ideas within the realm of any psyche have a certain amount of potential presentative activity. We can imagine that we could have an order-of-merit arrangement of all the ideas that make up the mental content of a given psyche. Every idea might be assumed to have a coefficient of presentative activity, even though it spent a large part of its existence quite comatose in the *unc*. If it is stirred up it will at once exercise all the presentative activity indicated by its coefficient, though till it is aroused it can exercise none at all.

At any given moment of our experience only a certain number of ideas—that number varying according to the organization of the ideas that happen to be in the dome at the time—are above the threshold. All the rest are below, but are capable of being, as it were, let loose under certain conditions. They are full of potential energy, but till this is released they are helpless. This release, it would appear, must come from without, and if an external influence is set to work we have an idea coming up over the threshold by *mediate* recall. Among the millions of potential ideas at the disposal of the reader of these pages at this moment, there is one that is in all probability lying inert in the *unc*. When he reads the word *orange* he realizes at once that an idea that a moment ago was only a potentiality has now become an actuality. It had a certain possible presentative activity, but it had none in actual operation. This is clearly a case of mediate recall. Without the intervention of the word there is no saying how long the idea of the psychologist's fruit might have lain quiescent. There were millions of such potential active ideas lying about in the *unc* just before the word *orange* was allowed to disturb the equilibrium. Among them probably was the idea of *psychology,* and that idea too may have been stimulated into activity by the sight of the printed word *orange*. Some of my readers may have thought of psychology because of the reference made sometime back to the orange as the psychologist's fruit. The recall of the idea of psychology in this case was also mediate. As the printed word *orange* recalled the idea of the fruit, so the idea of the fruit in its turn recalled the idea of psychology.

When we speak of an idea returning by immediate recall we get into a little trouble, for we seem to be giving to an idea a power of its own, whereas we have agreed that all the power an idea possesses it has obtained from the psyche. But there is no real difficulty, the idea that is brought up by mediate recall has the same sort of power as that which comes back apparently of its own accord. It is all a matter of degree. If the psyche has communicated to an idea so much presentative activity that it comes into the dome the moment the way is left clear, it has no need to have some other idea help it over the threshold, and therefore has no need of mediation. That engrossing disagreeable letter that we discussed a few pages back supplies an example of return by immediate recall.

The manipulation of the two forms of recall is of the first importance in carrying on mental process. We want to foster in numberless connections in our mental life groups of important and useful ideas so that they shall be ready at a moment's notice to spring into the dome the moment the coast is clear. As soon as we begin to deal with a certain subject there is a body of relevant ideas that get at once stimulated. They may not actually force themselves into the dome but they are on the leash just under the threshold, and on the slightest encouragement dash into the dome. The mere fact that we are dealing with the subject that concerns this particular group keeps them all on the alert, and the moment they are needed they break loose and cross the threshold. Mediate recall, on the other hand, demands the deliberate outside call originating either on the premises by the psyche itself, or from some outside influence. Thus immediate recall occurs as the result of previous arrangement; it is the reward, or the punishment, for having organized ideas in a particular way so that they act in a definitely determined style as soon as this particular organized group finds some of its members drawn into the dome in the ordinary process of mental action.

Mediate recall is more a matter of arranging for the calling up at need of ideas that either have not before been co-presented with the ideas that make up "the universe of discourse" (a chilled name for "the subject we are talking about") or have not been often enough presented along with them to form such a strong union as to insure a vigorous stimulation the moment any of the group appears in the dome.

It may be said that when the psyche manipulates the ideas by mediate recall it is working at short range, whereas immediate recall is long range work. An idea comes up by immediate recall because of organization that took place some time ago, often quite a long time ago. It is clear that a good deal of the work of the psycho-analysts is given to tracing out organizations that have given to certain ideas a greater power of immediate recall than is for the good of the psyche. But here it has to be noted that the trouble is not immediate recall itself but the sort of idea to which this power has been given. The power cannot be too great in the case of desirable ideas.

When we are studying a new subject, say a science or a language, one of our main objects is to give to certain ideas a power of immediate recall, so that they shall present themselves the moment they are desired. They do not need a medium that shall recall them; all they require is to be wanted; a vacuum is enough for them.

Maybe the reader shares with me a certain uneasiness about the use of the term *immediate recall*. It has been employed above as if from the standpoint of the idea itself. In mediate recall it is apparently the psyche that does the recalling. But in the case of the immediate form the idea seems to do its own recalling. It is not an important matter, but if the reader feels that the wording is bad let us call it immediate *return,* in spite of the fact that immediate recall is the recognized term. Our presentation is a little different from the usual, so the trifling change in phrasing may be permitted.

If the reader keeps clearly in mind all that has been said above about the conditions under which an idea can be recalled or can return to the dome, when we come to deal with the psychology of temptation in Chapter XII, he will find plenty of opportunity for practical application.

Herbart was so convinced that the mechanism of ideas could be developed on mathematical lines that he talks of working out their reactions by using the formula of proportion. It may not be possible to reduce our calculations to such a fine issue as this, but it is certainly worth our while to consider how far a sort of mechanism may be applied to the interaction of ideas in and outside of the dome.

The important point at the present stage is to make up our minds about what takes place below the threshold. We have seen, in a general way, how things work above the threshold. There is an interplay among the ideas depending upon the varying amounts of presentative activity each may possess at a given moment. The manipulation of this presentative activity is the means at the disposal of anyone who wishes to control the mental processes of himself, or of others. This manipulation is in the highest degree difficult; some indeed maintain that it is impossible. If there be all this trouble about the control of ideas above the threshold, and therefore open to inspection, how much more difficult to deal with ideas below the threshold, and therefore beyond our direct investigation. It is because the psycho-analysts offer us means of carrying on our examination below the threshold that they get the favourable reception accorded to them by the thinking public, or at any rate a section of it.

It is not our business in these pages to enter into controversy with any school of psychologists. It is our desire to get from the whole subject the greatest amount of help in our ordinary life. So instead of quarrelling with the psycho-analysts, or their critics, let us carry on the investigation into the psychic underworld by applying there the same principles that we have found or assumed in the above-threshold field. There is nothing to be gained by inventing for the underworld a set of new and different principles from those we find in operation above the threshold. It is true that the principles we have already come across are largely hypothetical and may be fairly classed as figurative. But this encourages us the more to apply them below the threshold as well as above. There need be no real break between what goes on in the dome and what goes on under it. An idea below the threshold need not differ in its nature from what it is when above it.

BELOW THE THRESHOLD

No doubt there is all the difference in the world between being in consciousness and being out of consciousness. It would seem to be a difference in kind, and our whole tendency in this book up till now has been to emphasize this fundamental difference. We have accepted consciousness as something unique and involving a mystery that must be accepted, though it cannot be explained. But in asking the reader to plunge below the threshold and apply there the same principles that we have found applicable in the upper region, we are not in any fashion giving away the mystery, or in an underhand way denying its existence. It remains as profound as before, and the position is unchanged in its essence, though the extension to the underworld of the principles of the upper world certainly helps us in making a clear exposition of facts that we may not be able to explain in a fundamental way. After all, we have admitted, indeed proclaimed, that our treatment of the problem of the interaction of the ideas is metaphorical, so there can be no great harm in carrying our metaphor below the threshold.

Accordingly, we are going to assume that this thing we have called presentative activity is a force communicated to and retained by ideas, and is liable to variations according to the supply, this supply being in turn regulated by the circumstances of the moment. Suppose we give to this force the noncommittal name of psychic force. Now we may quite reasonably say that a certain amount of this force is necessary before an idea can find its way into the consciousness. The moment this amount is reached the idea bobs up above the threshold. We can imagine —our imagination is busy at any rate in this exposition—some ideas having attained just this minimum psychic force. They therefore lie breathless on the actual threshold, but can neither rise higher nor fall lower. If the amount of force increases they mount up the sides of the dome, if it diminishes the idea falls below the threshold and out of the dome altogether.

For we must note in dealing with the personified ideas that all places within the dome are not of equal attraction for the ideas. In the outer darkness, where the excluded ideas gnash their teeth, we are inclined to think that it does not matter where they are, so long as they are not above the threshold. But once they get above the threshold we have only to consult our experience to discover and admit that they are not content till they get to that part of the dome that we may call the apex. The nearer they are to the threshold the less vigorous they are, the nearer to the apex the more power they seem to possess. At the actual summit alone are they perfectly content. Fortunately for us, but unfortunately for the ideas, a place at the apex cannot be retained for long. Other ideas claim their share in the sunshine, and each idea in turn must give place to some one of its competitors. Only under pathological conditions can any one idea usurp a sort of permanent leasehold of the apex. People in whose domes an idea can establish a monopoly of the apex are to be found in homes for the insane, catalogued under some heading that is the learned equivalent for "fixed idea." But in ordinary normal experience there is a steadily flowing current of ideas within the dome, in the course of which "flow" certain ideas reach the apex, stay there momentarily, and then pass downward. It does not follow that the same idea may not come back frequently to the apex. It may drop from the apex directly below the threshold and not come back again to the dome for a very long period, or it may hover in the dome for a long while near the threshold and bob up every now and again to the very apex. On the other hand it may remain very near the threshold all the time, or very near the apex, all depending on its connection with the dominant groups of ideas that at the moment control the activities within the dome. To realize the sort of thing that goes on, you have only to examine the way in which ideas bob in and out of consciousness when you are thinking out some problem.

The question has now to be faced: What is going on below the threshold when the ideas are behaving in this vigorous way above? Idea after idea plays its more or less striking part above the threshold and then falls into the oblivion of the *unc*. But the question naturally arises: Does it at once sink into ineffectiveness below the threshold? The answer seems to be that everything depends on the kind of connection it has with the ideas that make up the content of the dome at the time. If it represents merely a tiny element in an illustration it may drop dead below the threshold and at once become inconspicuous and ineffective, but if it forms an essential part of the subject of discourse it may remain simmering below the threshold, but ready at a moment's notice to thrust itself up into consciousness and take an important part in the interactions that are going on.

PSYCHIC FORCE

In order to facilitate our exposition suppose we come back to that notion of psychic force. The moment an idea has exhausted its force and reached a state in which it no longer possesses the minimum amount necessary to retain its place above the threshold, it naturally and inevitably falls into the *unc*. In order to give a certain amount of stiffening to this mere metaphor we had better refer to cases that science presents us that seem to offer a useful parallel on a plane of demonstrated fact. Take the spectrum, with its series of colours ranging from red up to violet. These colours are causally related to vibrations of the ether of differing wave lengths. The longest wave lengths are at the red end of the spectrum and the shortest at the violet end. Between these the various colours have wave lengths diminishing from the red to the violet. What interests us here is that the wave lengths do not stop at the red or at the violet but go on increasing at the red end and diminishing at the violet end. We may naturally ask why in that case there are not colours below the red and above the violet. The answer is very simple. There are no colours there because we have no instrument to receive them. Our eyes are so constructed that they can turn the stimulus supplied by the wave lengths into colours up to a certain point but no farther. The wave lengths below the red are too big to fit into our ocular receiving apparatus, so they can go on vibrating without producing any effect upon us.

The musical scale supplies an even better illustration, for it gives an intimation, a physical intimation, that there is something going on below the recognized scale. Our perception of musical sound varies from the deepest bass tones of a great organ to the irritatingly elusive squeak that finishes the siren's ultimate shrill. We are often at a loss to know when the siren actually has finished. We sometimes think we hear a sound "thinner, clearer, farther blowing" after the pattern of the poet's horns of elfland. But at the lower level we get a more satisfactory result for our present purpose. With a great organ the lower notes can be so handled that we can hear in such a way as to be able to distinguish the actual vibrations that make up the musical sound, and finally the instrument can be so manipulated that we hear no musical sound at all but can distinguish vibrations that are too slow to enable our ear apparatus to turn them into musical sounds.

So may it be with the ideas. A certain fixed amount of psychic force may be necessary to enable an idea to rise above the threshold, but it may possess an amount of psychic force nearly, but not quite, enough to bring it over the threshold. In this case its position would be just on the verge of the threshold, so that it might very naturally be expected to have more influence on the psyche with which it is connected than would ideas of inferior psychic energy. The truth is that we must take account of the relative positions of the elements that make up the total mental content of the psyche at any particular time. At the moment, for example, when you read this page your total of ideas falls into two classes of very unequal size—those within your consciousness and those without. We have seen that in the psycho-analytic figure of the iceberg the part below the water represents very inadequately the bulk of ideas of which we are at any moment unconscious. The ideas below the threshold—what may be called, if you like, potential ideas—are practically innumerable. At the very least they must be counted by thousands of millions. The majority of them are permanently under the threshold and may never appear in the dome again. Each individual experience we have ever had was represented by an idea, and may possibly be repeated as a sort of type of the same experience. The whole situation bristles with difficulties, and is very hard to reduce to definite details. If we were called upon to classify the various types of ideas according to their chance of reappearance above the threshold, we would find ourselves a good deal at a loss. We could describe certain big categories based on the needs of ordinary life, but there would always have to be left a large margin for the possible changes of circumstances, and a still bigger one for chance.

But leaving the quantitative element out of account, and coming to the possibility of manipulating the ideas in the *unc,* we get a good deal of encouragement from the assumption we have made of the essential sameness of the laws of interaction among the ideas above and below the threshold. We are not on the way to make any actual discoveries in the matter of mental process. The psycho-analysts themselves have brought out nothing new; all they have done is to organize methods that were used before their time. But there is one method of manipulating ideas that is of such practical importance that it deserves a separate chapter to itself. This method is *suggestion,* and has a rather shady reputation, since it has been in the past used in a somewhat reprehensible way. It can, however, be used for good ends as well as for bad, and in Chapter XII we shall see what can be done in the way of rehabilitating a process that is too valuable to be handed over without resistance to the powers of evil.

But the psycho-analysts are not so much concerned with forces leading to action as in finding out what is going on in the psychic nether regions. Theirs is a method of investigation by which they can discover whenever anything goes wrong with the working of the ideas in the underworld, determine its nature, and apply whatever remedial measures are available. They work along lines that involve all that we have said about association and its workings. To understand their methods it may be well to give a description of how a typical psycho-analyst works in his den.

A TYPICAL PSYCHO-ANALYST'S DEN

This den differs materially from an ordinary doctor's consulting room or office. When you call by appointment on an ordinary successful medical practitioner you find him sitting at his desk with a not too comfortable chair by his side waiting for you, in such a position that you are facing the light. On the table beside him are various imposing instruments, of not too fierce appearance. There are microscopes and test tubes rather than scalpels and bistouries. His notebook occupies a prominent place. On the other hand, if some complex or phobia is annoying you and you are advised to have an interview with a practising psycho-analyst, you will find a very different environment. The room will be well-furnished, rather on the heavy side. The colour tone will be dark: deep blue, purplish crimson, or dull gold. There will be no desk at all, and the doctor will not be sitting. You will probably find him standing in front of the fireplace, in which, if the weather will at all stand it, there burns a cheerful fire. If there is no fire he will probably be found leaning with one elbow on the mantelpiece, and looking out of the window rather than at the door by which you enter. Probably he will not look at you at the beginning, but assure you of your welcome by a word or two of pleasant greeting. He will request you to take a seat; then you will notice that you have the choice of a comfortable easy chair and an enticing couch. If you are a man you will take the couch, if a woman the easy chair—at least that is the experience of my professional psycho-analyst friends—and you will be invited by your well-poised consultant to talk to him about anything that occurs to you. Very likely you will nervously protest that you haven't anything to talk about. But he will put you at your ease on that point by urging you to talk of whatever occurs to you. You may begin on the weather and things go well. But if you renew your protest and say you haven't an idea to talk about he will encourage you to tell him that you have nothing to say and to tell him also whether you are always so tongue-tied. If you still remain silent he will ask you if you don't find most people very talkative. In some way or other he will rouse you to say something, and as soon as he gets you started things go pretty well. It is true that every now and again you seem to run down and have nothing more to add. When this happens he is at hand unostentatiously to put in an insignificant question or challenging remark. His great object is to keep you talking in as natural a way as possible. He appears to abhor a vacuum in the conversation.

After forty or fifty minutes of this one-sided talk he looks at his watch and says something like this: "Well, well: this is Tuesday, would Friday afternoon at 3:30 suit you for another call, when we can go more directly into your case?" You are confused, and a little disappointed. He has said remarkably little about your case so far, and you are inclined to wonder whether he has taken sufficient interest in you. But the moment you have closed the door behind you he dashes to the desk in the corner and scribbles down in his notebook all the points at which you ran down in your talking, making a note of each subject on which you came to a stop.

On Friday he takes a more active share in the conversation and appears to be altogether more alive. You do not notice that he is guiding the talk, and the chances are all against your perceiving that he leads up every now and again to one of the subjects on which you ran down. But he is doing this all the while and is noting carefully whether at any of these former halting places you halt again. Some of the ideas he leads up to cause no pause in your reply and these ideas he calmly dismisses from his mind. But at other ideas you pause again just as you did the first time. Of these he takes careful note, without in any way letting you perceive that he does so. These ideas he regards as of significance. But without calling your attention to them he goes a little more into detail with regard to the symptoms you are only too eager to tell him; and after he has allowed you to satisfy your natural desire to talk about your troubles he sympathetically tells you that if you come back on the following Tuesday he will probably be in a position to deal effectively with your case.

Before Tuesday he has consulted (without your knowledge) your parents or whichever of your relations or intimate friends he can reach without fear of their giving him away to you. He asks them whether they can remember anything in your life, particularly in your earliest years, having some connection with the various matters at which you showed a disposition to baulk on the two occasions on which you had the interview with him. If, for example, you had stopped talking when you came to the following words: pennies, rags, candy, spring, bag, barking, bones, darkness, lobby, swing door, dog, and at the second interview you had shown a little uneasiness at the mention of these words, the psycho-analyst would ask your relations or friends whether they could recall some incident in your life that had any connection with this group of ideas. If nothing of the kind could be brought up the case would make no progress, and the doctor would need to begin all over again.

But in the actual case on which this imaginary account is founded the parents did remember that in their boy's very early life an incident had occurred that had included practically all the significant words the doctor had submitted. As a tiny boy the patient had been in the habit of taking to a man who lived in a tenement house a canvas bag containing sometimes rags and sometimes bones. This man had been accustomed to give a packet of candy if the catch was not worth very much, but if the contents of the bag had a higher market value he would give the boy a few of the less important coins of the realm. On one occasion the boy had climbed the stairs as usual and had rung the doorbell. The door had been opened by a spring that was operated from the man's room inside. The boy had entered the lobby, which he found in black darkness, for the man had not opened his inner door. The boy got frightened and began to whimper. This started an invisible dog to bark and to snuff ominously round the boy's legs. It was never definitely ascertained whether the boy had fainted or not but it was quite evident that he had had a bad fright.

The psycho-analysts' view is that when a subject has the cause of his phobia explained to him the phobia itself disappears. But on this occasion the explanation left the subject cold. He was just as claustraphobic as ever. Fortunately, however, the tenement house was still standing, and when the patient was taken to the very stair-landing where the incident had occurred the whole of the circumstances came back to him, and as a result he travelled home that night on the Underground.

WORD ASSOCIATION

In the above case (based on an actual one treated by a distinguished psychologist) the use of association was called free, though at the second interview it was to some extent directed. In general the process called *directed association* is very definitely guided into certain paths by the investigating psychoanalyst. In this form of investigation the important element is the time taken between the application of a stimulus and the corresponding reaction. Take half a dozen of your friends and experiment upon them by noting how long they take between having any sort of word addressed to them and the response they make to it by supplying the first word that comes into their mind. You say *dog* and the subject replies *cat;* you say *house* and the response is *door.* The word *Tom* may produce *cat; orchard* brings *apple; plus* elicits *fours.* People differ a good deal in the speed with which these happy-go-lucky responses are produced, but they usually are pretty constant in the time they take. In this way each of us may be said to have an index number of reaction. The average time of reaction in this matter lies anywhere between .6 and 1.6 seconds. All this is plain sailing and would not help us much in our attempts to investigate the minds of others.

But we can go further, for it is found that the fact that certain words have a special interest for people causes a delay in making the appropriate response. It is easy to imagine that a young man deeply in love with a girl will be a little disturbed emotionally at the mention of her name and, not willing to expose the state of his heart, might take quite a while before he thought of something neutral to say as a reaction to her name. So it is found that if we want to know how a person is affected toward a certain circumstance all we have to do is to ply him with a number of words connected with that circumstance and see how he reacts to them.

This method may be applied in the detection of crime if the law allows it. In England and in America it is not permitted to apply this directed association. But in France it is not illegal. The way in which it is applied is by drawing up a list of, say, one hundred words, some of which are connected with the crime in question, and the rest are not. Usually a third of the selected words may be called dangerous, the remaining two thirds being innocuous. Take, for example, a case of murder reported to have occurred in a garret in the Montmartre district of Paris. The victim was an old gray-haired man. The motive appeared to be robbery of a hoard of coins contained in a child's *tirelire* (a sort of penny bank into which coins can be easily inserted but can be extracted only with difficulty); there was a canary in a cage hanging in front of the window; a dirty shawl had been drawn in front of the window panes to prevent the possibility of oversight from without; the instrument used was a razor. The dangerous words inserted among the sixty-six innocent ones included: *gray hair, canary, tirelire, francs, bed sheets, window, garret, razor, blood, crime, police, guillotine, shawl, escape.* When the whole hundred words had been given to the suspected person it was found that the time taken to reply to nearly every one of the dangerous words was a good deal longer than in the case of the innocent ones. Naturally, this did not prove that the accused was guilty. It merely proved that he had an intimate knowledge of the circumstances of the crime and that he had a grave personal interest in it.

Of course, skilled criminals can put up a definite defense against this mode of attack. They know the dangerous words just as well as the investigators, and can make preparations accordingly. It is said that such ingenious persons have on occasion prepared themselves for the ordeal and that they were caught out just as badly as their simpler brethren. For when their results were examined it was found that the time for most of the dangerous words was *shorter* than the average. The preparation for the dangerous words was so complete that the reaction was exceptionally rapid. Certain students of psychology in an American university who were experimented on with this method hit upon the expedient of counting five before every reply, thus reducing their reaction time to a uniformity. But even here it was found that it was possible to detect special knowledge, because just after each dangerous word had been successfully treated to a uniform reaction, a certain mental disturbance frequently occurred leading to an irregularity in the reaction to each of the words that followed a dangerous one: a deferred nervous shock caused not so much by guilt—for there was no guilt involved—as by exultation at having successfully negotiated a difficulty. All of this should be gratifying to the configurationists as illustrating the practical impossibility of keeping elements apart from one another. The condition of the whole psyche in all the above cases exercises an influence on all the different concepts presented for reaction. The healthy psyche is one and indivisible, and in its normal activity unifies the various clusters of ideas that are called up whether by mediate or immediate recall; which suggests to me that this is not an inappropriate place to do a little bit of unification in the content of this chapter.

IDEA AND CONCEPT DEFINED

In this long discussion of what goes on below and above the threshold of consciousness the reader cannot have failed to notice the frequent occurrence of the term *idea,* and he may have observed that another term, *concept,* is sometimes used as an alternative. This is quite in keeping with the custom of the general writers on psychology. But it seems a little wasteful to have two such good terms used as mere synonyms, especially when two different aspects of the psychological unit are crying out for distinctive names.

We have found that when we use the psychological units as part of the presented content they are passive, but when we consider them as having presentative activity we regard them as forces. Now would it not be economical to limit the term *idea* to the passive aspect, and keep the term *concept* for the active? So long as we deal with presented content, let us speak of *ideas;* when we go on to presentative activity let us use the term *concept.*

An old-fashioned use of the word *concept* takes us back to the borderland between Logic and Psychology, when we were told that concepts were formed by a process of abstraction and generalization. We were taught at college that we reached class names, which represented concepts, by gathering up from the members of a group all the qualities that entitled them to membership of that group. This was abstraction. Then we proceeded to combine all these qualities into a whole and thus build up a compound that formed a sort of standard for that group. This building-up process was known as generalization, and the result was a concept. Thus when we had gathered together all the qualities that belong to every insect—three-partedness, ringedness, six-leggedness, and the other qualities that we agree to belong to insectness—we used this concept as a standard, and if any creature came along, say a spider, to claim admission to the insect class, it had to be put through its paces to see whether it conformed to the standard. The spider might get along very well to begin with—there are many people who regard him as an insect—but trouble would arise at various points. His legs in particular would form an insuperable difficulty. The possession of an extra pair of legs effectually bars the spider from inclusion under the concept *insect*.

Psychologists no longer hold that we go through this abstraction and generalization business in forming general ideas, though logicians may still use these processes in explaining how concepts may be accurately used in deductive thinking. At this point indeed psychology and logic apparently agree to differ, and we really have two distinct kinds of concepts, the logical and the psychological. The first is perfectly accurate and unchangeable, and is the same for every thinking person. It is established by agreement, and once the agreement is made there can be no further question about it. All the concepts in geometry, for example, are agreed upon among the geometricians. Among a hallful of orthodox mathematicians there is no possibility of confusion about what is and what is not a square.

The psychological concept, on the other hand, is the notion each of us has of "whatever is the object of the understanding when a man thinks." The logical concept of an island is a piece of land wholly surrounded by water—just that and nothing more. The psychological concept may include all manner of qualities not inconsistent with the logical concept but not essential to that concept. For example, it may have a definite shape, a clearly defined fauna and flora. It may even have a man Friday knocking about, if the concept maker is of a certain age. There is room for both kinds of concepts in ordinary life, though the logician does look askance at the psychological variety.

Of the two it may be fairly said that the term *idea* fits in better with the logician's view and the term *concept* with the psychologist's. The logical concept is inert; it has no inherent force. As there is room for both views of the nature of the concept it may not be a bad plan to mark them off by different names. It may be advisable, but the reader will please note that the distinction is not generally recognized, to restrict the term *idea* to the logical or passive aspect and retain *concept* for the active or dynamic aspect favoured by psychology. The configurationists will no doubt accept the distinction only under protest, as they are suspicious of any system that analyzes out a whole and reduces it to units. Yet anyone reading their work will readily see that the distinction would often help them in their exposition. In any case, in what remains of this book we shall keep to the distinction, one result of which will in all probability be that we shall very seldom indeed use the term *idea*—so thoroughly entrenched is the dynamic *concept* in the new psychology.

CHAPTER VI

THE TWO WORLDS

The Inner and the Outer World—The Correspondence of the Two Worlds—Is "Faculty" Psychology Criminal?—About Sensations—Perceptions—Environment and the Psyche

WHILE the ego may be permitted in a figurative way to extend outside the body-mind combination, we feel that in reality its range does not reach beyond the body, and that the recognition of one's clothes, one's pipe, one's living room, to say nothing of the whole outside universe, as parts of the ego, is only an expository device, useful enough in its way but not to be treated as fact. The moment we get out of the region of consciousness we feel that we are beyond the borders of our personality. It is true that the psychologist who is eager to extend the limits of his domain is ready to give cases in which the ego pushes itself out beyond the limits of the mere body. He points out, for example, that in the act of handwriting the feeling of pressure is not confined to the tip of the finger that guides the pen but is projected beyond the body altogether. We actually feel the pressure not at the tip of the finger but at the tip of the pen nib. But while our experience verifies the psychologist's statement and we distinctly feel the pressure at the point where the nib is in contact with the paper, we realize that there is a difference between the feeling at the two tips, and that the tip of the finger is more intimately a part of us than is the tip of the pen. We are successful in projecting the ego out into the tip of the pen but we know all the time that there is something artificial about the situation at the pen tip, that the experience there is not first hand.

THE INNER AND THE OUTER WORLD

The truth is that everybody recognizes that there is a vital distinction between our body with its all-pervading psyche on the one hand, and the whole of the rest of the world on the other. People who have never heard of the ego and the non-ego recognize quite clearly the distinction we are drawing here, and are at no loss to mark off the two worlds that are commonly called the inner and the outer. For the ego does form a little world of its own in the midst of the great world outside of it. People who are innocent of the slightest taint of psychology speak quite easily about the inner world, and by that very phrase accept the view that there is another world that is not inner, and that in relation to the first may naturally be called outer. It is true that if we get into closer grip with the subject and question the plain man about the meaning he attaches to the phrase "inner world" we discover a distinct wobbliness about where the two worlds begin and end. The moment we get beyond the body-mind combination we are in the midst of the outer world and must do our best to make ourselves at home in it. All that we see there is made up of objects that are said to have certain qualities that enable us to recognize and classify them in such a way as to build up an intelligible whole with which we can deal satisfactorily.

Locke divided up these qualities into two classes, primary and secondary. Both of them become known to us only by our use of the senses; but with the primary group the senses do not in any way modify the qualities, while with the secondary group they do. The primary qualities seem to belong to the objects themselves in their own right, as it were. These include such matters as extension, figure, motion, and in general all spatial qualities. Everything dealing with bulk and space-filling is included in this class. To the secondary class belong all those qualities in which the senses of the perceiver play a part in modifying the result. All the qualities demanding the exercise of the special sense organs are regarded as secondary, for these organs have something to do with the results produced within the psyche. The primary qualities are assumed to be independent of the organs by which we apprehend them, while the secondary qualities are modified by the sense organs by which they come into our consciousness. When we become aware of geometrical forms we can assume that they are the same for all of us and are not in any way modified by the organs of sense by which we become aware of them. But with regard to colours, tastes, smells, sounds and the different experiences that can be referred to touch we have each our own standards. According to our make-up we may have different results produced by a certain coloured object. One may think it bluish green and another regard it as greenish blue, while a third may regard it as definitely blue. Some people actually get mixed up between green and red, while others have no sense of colour at all. The same lack of certainty applies with regard to all secondary qualities; whereas with regard to the primary no dispute can arise, though we are not quite so sure of this as we were before Einstein got his hand in and introduced disturbing elements. The distinction between the primary and secondary qualities helps rather than hinders the complicated process of world building.

In any case the psychologist and the plain man agree that there are two worlds, an inner and an outer, though the distinction between them may be hard to make out. Psychology naturally follows a line of demarcation that will fit in with its ordinary way of working. Since consciousness forms the basis of psychology, as interpreted by the majority of writers on the subject, we cannot do better than accept consciousness as the distinguishing element between the two worlds. The inner world may then be said to correspond to the realm of the ego which covers the range of consciousness. This realm must include all the ideas that are not in consciousness at any given moment, as well as those that are. The inner world may then be said to be made up of all the elements of consciousness actual or potential. If this be accepted then the outer world may be defined as all that lies outside of consciousness and yet may exercise an influence over our consciousness.

We may have to admit that we have no means of getting into direct contact with this outer world, but that need not greatly concern us. We may not be able ever to *prove* that there is an outer world. It may be created entirely by our ego. Well, even then our withers are unwrung. If there be trouble in the matter let the metaphysicians see to that. For us it is enough to know that there are two worlds, and that we must find out how they are related to one another. Those adjectives, the meaning of which we have been at such trouble to learn—*subjective* and *objective*—come in here very handily. The inner world is subjective, the outer objective.

THE CORRESPONDENCE OF THE TWO WORLDS

When it comes into the world the psyche is empty, a mere bundle of potentialities which can be realized only by interaction with the outer world which it finds waiting for it. The word "empty" suggests a receptacle waiting to be filled; but the psyche is not an entity in the sense of some sort of box into which things have to be packed. We can talk quite reasonably, in a metaphorical way, of building up the inner world; but we must never tire of reminding ourselves that we are not doing any real building. We sometimes employ the useful phrase "mental content" when we are dealing with the inner world. But this suggests too much the idea of a receptacle. In the same way the idea of building up the internal world suggests bricks. Both figures tend to mislead. The inner world is developed by a process of action and reaction between the two worlds, by experience in fact. In this process the child proceeds to realize his potentialities and in this way to build up a little world of his own. So far from being a little world of things, this is a little world of skills or powers. There is no *resemblance* between the inner and the outer world; the inner is not in any way a replica of the outer world. It is not concrete; it has no existence in space. It continues to be a bundle of potentialities, the only difference being that as we grow up the potentialities have been in many aspects realized, and the results organized in such a way that all new additions find their way automatically to their proper place in the structure.

When the baby first comes into the world he finds it what

Professor William James happily called a "big, booming, buzzing confusion." It is the clearing up of this confusion and the harnessing of the child's powers to definite lines of action that make up the inner-world building that all of us must do with whatever success our natural ability and the skill of our teachers, professional or other, can achieve.

The exact relation between the inner and the outer world is one of correspondence. The inner is so constructed as to fit into the needs of the outer. Our business at all times is to make ourselves at home in the outer world into which we have been born. Our education consists essentially of a process by which we are enabled to realize, partly through the efforts of teachers, parents, and others interested in our welfare, and partly by our own actual experience, what sort of world we are living in, and how to behave ourselves so as to meet all the demands made upon us in that world. Education really aids us in completing the momentous proposition, "This is a world in which . . ." We are continually learning new ways of finishing this sentence. For example: "This is a world in which unsupported objects fall to the ground; in which day follows night; in which the sun seems to go from east to west; in which honesty is the best policy; in which it does not pay to be lazy; in which two plus two invariably make four." The rules of living are made out of the various completions of this sentence in the different circumstances that arise in our progress from the cradle to the grave.

Our inner world, then, resolves itself into a great series of tendencies to deal with certain circumstances as they arise in such a way as to meet the needs of the case. When we accept this view we are saved, for the time being, from that tendency to hypostasis that we spoke of in Chapter III; for we see the folly of trying to make the inner world a sort of reproduction of the outer. Yet the temptation does not entirely disappear; after the usual manner of temptation it reappears in a different form. For in our examination of the process of building up this inner world we feel the need of stuff to do it with. We want building material, and our minds readily turn toward bricks. Naturally, no bricks are forthcoming, but material of some sort is felt to be necessary, and in fact is found in the shape of the idea. At once we are tempted to treat this idea as an entity, as something having an existence by and for itself; in other words we are inclined to hypostatize it.

We have agreed to accept for practical purposes John Locke's definition of an idea. But even if we put this definition in the unchilled form of "whatever a man thinks about" there is still a suggestion that an idea is a *thing* of some sort. The temptation to regard ideas as having a separate concrete existence is increased by the way in which we speak of "the contents of the mind," or its more usual form in these latter days, as we have already noticed, "mental content." The tendency to hypostatize is particularly strong in the somewhat atomistic scheme that we have borrowed from Herbart to aid in the exposition of the interplay of the elements to be found below the threshold. Giving ourselves our usual warning against the dangers of hypostatization, we must now carry on our examination of the correlation between the inner and the outer world.

The outside world exists in time and space and so far as we are concerned is built up out of sense impressions. It is preëminently concrete. The inner world may be said to be composed of impressions of the outer world. Some of these impressions are mere reproductions of the results of sense experience. We can make psychic reproductions of the outer world by recalling colours, tastes, smells, odours, shapes, and sounds. We often speak of making a mental *picture* of past experiences in this way, but we must be careful not to be misled by the term *picture* to think that only sights can be recalled in this fashion. The reproduction of past experience must make room for all the senses. Sometimes these reproduced elements are called ideas, and to this no great exception need be taken, though David Hume is probably right when he makes a certain distinction. The first-hand reaction of the senses to external stimuli he calls *impressions,* while the recalling of these impressions, after the occasion on which they made their appearance, gives rise to what he likes to imply by the term *ideas*. Still, in our wide use of the term *idea* we want to include all sorts and conditions of elements that go to make up the inner world. Whether we use the term *mental content* or not we are continually using such phrases as "the ideas in the mind," "he hasn't an idea in his head," "at the back of his mind is the idea"—all of which imply stark hypostasis. Yet we know quite well what people mean when they use such expressions, and we need not run away from the implications of these popular ways of speaking. We know that there is no *place* corresponding to the mind, but we can, without sin, assume such a place for purposes of exposition.

In passing, we may call attention to one particularly dangerous suggestion connected with this localization of ideas. The *brain* is often treated as if it were a convenient local habitation for ideas. No doubt this organ has an abundant supply of multipolar cells that are in some way or other connected with ideas; but they do not by any means pin down ideas to a cerebral here and now; ideas are freer than nerve cells.

It will be noted that in dealing with the two worlds we are continually passing from the one to the other. This is as it should be, for after all the two are inseparable: they form part of a whole, a whole that is one and indivisible. But for purposes of exposition it may be well to deal with the inner world by itself, though of course this separate treatment must ultimately lead to a treatment of the two, taken in their relation to one another.

The inner world treated by itself in this way must be regarded as empty—a sort of manufacturing plant ready to carry on processes as soon as the raw material is supplied. Kantian philosophers have a saying that demands from their students an inordinate expenditure of brain energy, since these students have always to think twice before using it. For as a matter of phrasing it sounds equally well whichever of the two important terms comes first. It runs: *Perception without conception is blind; conception without perception is empty.* Here perception stands for the process of acting upon the outer world and thus gathering material, and conception for the process of working up this material into something that is intelligible to the psyche. All the psychic machinery that is brought into play in perception and conception as thus understood makes up the inner world.

The psyche is assumed to have certain powers in the exercise of which the inner world is gradually built up. The fitting in of perception to conception may be said to be the building up of the inner world.

IS "FACULTY" PSYCHOLOGY CRIMINAL?

The natural tendency of psychologists in the past has been to hypostatize the innate powers, the sort of machinery in the psychic plant that can be turned to work up whatever material is supplied to it. These powers were usually called *faculties,* and round them a great discussion arose accompanied by a good deal of heat.

In the old-fashioned normal schools, and in the earlier psychological textbooks, a great deal of attention was paid to these faculties. A favourite question in old-time examination papers in this subject was: "Name the mental faculties in the order of their development." Sometimes this question was set two or three years running, and the students used to wonder why, till some of the more sprightly among them explained the repetition by saying that the examiners, not knowing the order themselves, hit upon the plan of seeing whether the students could tell them.

In truth, when one sits down to answer for oneself that old-fashioned examination question serious difficulty arises. To be sure, in those old days there was a recognized orthodox answer, to be found in the scrappy little textbooks that were provided as labour-saving devices for students who were being trained to be teachers. Full marks waited for those who remembered enough from their manual to write down: "Consciousness, sensation, perception, conception, association, attention, memory, imagination, judgment, reasoning." But if a student went beyond the range of his manual and started in to discuss the matter and to elaborate his thesis, disaster inevitably followed. For it was found impossible to justify this tidy little arrangement. The first three faculties could no doubt be supported in their claims to rank in that order, and conception certainly could not come much earlier than the fourth place. But such things as attention and association could not be postponed till the late stage at which they appear on the list. Then memory is clearly a fundamental process and must be present from the very beginning, else no material could be retained in its proper place for even the earliest faculties to operate on and thus demonstrate their existence. Imagination is probably in operation all along the line, and does not wait till the textbook releases it at the eighth step. As a matter of fact, the whole ego depends for its existence on memory. You who read this page depend on memory to prove to yourself that you are the same *you* as began to read this chapter. So with regard to all the faculties, they are inextricably mixed up with one another. No doubt the faculties may be classified according to the amount of work they do at various stages of development, and such a classification has its uses. Why psychologists are so severe on the old faculty psychology is that it tends to lead to a false view of the whole problem of the psyche and its development.

So many and so great are the difficulties roused by the whole discussion that many psychologists have cut the knot and as we have seen have decided not to speak of faculties at all. So with a bang exit the old faculty psychology! But if we are prohibited to speak of the faculties how are we to name the various ways in which our egos give themselves expression? In other words, how are we to name what we used to call faculties? For obviously there must be something underlying the long-established name. One psychologist, Prof. G. F. Stout, gets out of the difficulty by the cumbrous method of calling each of the so-called faculties a "mode of being conscious." The advantage of this descriptive term is that it calls attention to the intrinsically unitary character of the psyche. It always acts as a whole. We must never forget that the psyche is one and indivisible, and that though it appears to act departmentally, it is always the same psyche that is working in the various ways that are usually indicated by the names we are accustomed to give to the old-fashioned faculties. In reality there is no harm in using the term *faculty,* nor in using the ordinary names for the specific faculties, so long as we are not led away by the use of the terms to imagine that we have existing things corresponding to the possibilities of our psychic activities. That there is real danger of misunderstanding through the hypostatization underlying the ordinary use of the names of the so-called faculties will be felt by all thoughtful people, and will be illustrated when we come to deal with what is called *the will.*

After all these warnings it may not be altogether unwise to give a caution on the other side and suggest that there is nothing criminal in the use of the term *faculty.* We can make ourselves ridiculous by a rabid insistence on the complete excision of this word from our psychological vocabulary. It is so familiar in ordinary speech that we find it difficult to get along without it. Indeed a comic situation sometimes arises in a psychological lecture room when the professor after half an hour's diatribe against the use of this term finds himself during the second half of his lecture unwittingly using it himself as briskly as the most commonplace of his students. The cause lies in the exceeding usefulness of the proscribed term. It is a little pedantic to forbid terms that naturally lend themselves to clear exposition. We must not find fault with our friends and acquaintances who use the terms of the Faculty Psychology, so long as we ourselves are aware of the dangers the term involves to the unwary. Our business is to keep ourselves straight, not to institute a crusade for accurate psychological phraseology among our friends.

ABOUT SENSATIONS

The "mode of being conscious" that rouses least opposition when it claims to be a faculty is what is known as *sensation.* Nobody outside of a psychological classroom raises any objection to a man claiming to have certain senses, nor to his calling the results of the functioning of these senses a sensation. This right to a separate existence is supported by the fact that each of the special senses has a separate organ set apart for its individual use. Unluckily for the claims of the senses for complete freedom from criticism there has arisen a new development in the treatment of the senses. When in times past a man spoke of his *five* senses he was regarded as speaking literally, and when some misguided wight complained that the ghost had frightened him out of his *seven* senses the numeral was accepted as an exaggeration that was perhaps justified by the demands of the situation. But now in sober earnest the number of senses has been increased by accurate analysis to a number that daunts the imagination. Prof. E. B. Titchener in his *Outline of Psychology* gives a classified analysis of the special senses that includes thirteen items; and as if this unlucky number were not enough he goes on later to discover the "total number of elementary sensations" and reaches a number that justifies the use of an adjective that one should use sparingly—*appalling*. For the total "more than 42,415" is big enough to cause anyone to appear so pale as to warrant the adjective. There is a hint in the text that even this number may be exceeded, and indeed if this is what we find in an outline what may we not expect in a full treatise. Accordingly, we may well beat a strategic retreat and fall back upon a more unsophisticated witness.

If John Bunyan were called upon to-day to write an up-to-date version of his *Siege of Mansoul* he would probably find himself in difficulties with regard to the number of gates he would supply to his city. In his psychologically easy-going day nobody found fault with his simple five gates. These were, you remember, Eye-gate, Ear-gate, Mouth-gate, Nose-gate, and Feel-gate. But the simple-minded genius of Bunyan, all untainted as it was with psychological refinements, still indicated the underlying tendencies of psychology, in the different form taken by his name for the last gate. It has no reference to any specific part of the body like the others, but contents itself with the general function of touch. It is in this Feel-gate section that the modern psychologists have worked in all their refinements connected with sensations of temperature, resistance, pressure, pleasure-pain tone, and what not.

Another popular figure of speech presents these gateways as the means of communication between the inner and the outer world. This time the cognitive element is stressed, and the problem is how knowledge of the outer world may penetrate the citadel of the mind. Most of us are familiar with the phrase, "the five gateways of knowledge." I do not know whether the phrase was coined by a certain Professor Wilson, but his book with that title has certainly done a great deal to popularize it and give it currency. The figure naturally lends itself to the exposition of the mode in which knowledge is acquired. This time we are thinking more of the admission of outside forces; in the case of Mansoul the problem was to exclude forces. But fortunately the business of a gate works both ways: to let in as well as keep out.

In the process of inner-world building the psyche must make sallies out into the outer world and bring back as much material as it finds desirable. Friedrich Froebel, the German psychological educationist, uses a couple of phrases that are illuminating in this connection. When youngsters are busily engaged in noting what is taking place around them, investigating and experimenting, he says that they are "making the outer inner." But when they have acquired a sufficient amount of material and set about wondering what use they can make of this material, and, as a result, proceed to modify something in the outer world, in accordance with what they have thought, they are said to be "making the inner outer." Every time that a child makes a plan of how things should be changed in the outer world, and proceeds to make his mental picture realize itself in outer material, he is clearly making the inner outer. Naturally this process does not limit itself to childhood, though its manifestations are at that period more conspicuous than in mature life. Most of the structure of the inner world has to come into being at the early stages; later periods have a great deal of important work to do in the way of completing, perfecting, and remodelling the structure already set up. The original formative work is mainly done during the period included in what may be called "the span of education."

In this work the senses play a somewhat different part in different psyches, according to the special bents of individuals. While we all have the same senses that work in practically the same way, we all have preferences for certain of the senses, that may be called, accordingly, "preferred senses." People are classified according to their preferred sense as *visuals* (sometimes called *visiles*), *audiles, tactiles.* It is not usual to speak of *olfactives,* or *gustatives,* though there is really no reason why smell and taste should not rank as preferred senses as well as the nobler three. We are not to run away with the impression that visuals get all their knowledge through the eye, the audiles through the ear, and tactiles through the various organs of touch. All that is implied is that individuals so named prefer to get their information through the sense implied in the descriptive word. A person may acquire most of his knowledge through the eye, and yet be an audile, because he likes to get his information through that sense. These preferences are of importance in acquiring and communicating knowledge, and he is not a wise teacher or social mixer who neglects to keep himself informed of the sense preferences of those with whom he deals.

Among all the senses that play a rôle in inner-world building psychologists make a distinction between pure sensation and sensation as worked up in connection with the inner and outer worlds. Pure sensation is the mere physiological response to a physical stimulus. If we can just see green, and nothing but green, we may be said to have pure sensation. But almost never do we see green simply as such; it is nearly always a green *something* that we see: a green meadow or a green hat.

PERCEPTIONS

It is sometimes said that at the very moment of awakening out of a deep sleep we may be said to have pure sensation. Our various senses produce their normal reactions, but the psyche can attach no meaning to them: it experiences sensations and that is all there is about it. In a second or so the ego not only has sensations as before but it interprets them, it understands what they mean, and we pass to a different level of experience, called *perception,* which may be described in homespun as sensation plus sense, or sensation plus meaning. If a chillier description is wanted we may speak of perception as "the cognitive aspect of sensation." Another definition is "localized sensation."

The result in the psyche of pure sensation may be called a *sencept,* a term for which even psychologists do not seem to find a great need. The result of the process of perception, however, appears to be of some service, for the term *percept* is quite commonly used. We have already dealt with the process of conception in which by abstraction and generalization a result is produced that is called a concept. We have found that this concept has a dynamic element, and therefore introduces something quite new in this process of manipulating the elements that go to make up the mental content. There are really five kinds of units out of which are built up the complete mental content, in other words the internal world. They are the *sencept,* the *percept,* the *image,* the *generalized image* (or *type*), the *concept.*

The first two are easily dealt with. The sencept is a mere physiologico-psychological unit. The percept is what occurs in the mind when attention is directed to something here and now present. The image is a mental reproduction of a percept. When we raise an image in the mind we need have nothing external to us corresponding to the image we have conjured up within. The generalized image (or type) is a sort of image but it is not, like an ordinary image, the mere reproduction of something that has been actually perceived in the outer world, but a sort of image made by ourselves so as to include as many of the qualities of that kind of object as may be included in one particular example. Thus the dog that is here and now present, and that we are looking at, forms a percept in the mind. Suppose we now close our eyes and recall as clear a picture as we can of the dog we have just seen we get an image. But now if we want an image that will not reproduce any particular percept, but that will represent, or stand for, the whole group, we have to make a combination that will include all the essentials, and at the same time look like the greatest possible number of the members of the group.

Thus in dealing with the *insecta* a college lecturer will produce in his classroom a two-feet long papier-mâché model of a cockchafer, and demonstrate from that, because this insect combines practically all the essentials in the definition of an insect, and has at the same time a general resemblance to the greatest number of insects of all kinds. It has to be admitted that many insects are grotesquely unlike the cockchafer. We cannot hope to get any insect that will resemble in detail an ant, a bee, a butterfly, and a daddy longlegs. If in an illustrated dictionary it is desired to give a generalized image of a dog, some particular species of dog must be chosen. Obviously, a dachshund would not fill the bill—it is too prominently individual with its unique proportions that have been catalogued as "half-a-dog high and a dog-and-a-half long." For the same reason a huge St. Bernard and a tiny Pekingese are equally ineligible. The dictionary man must fall back upon a medium-sized canine, probably of the terrier type. Naturally he is tempted to give several illustrations, each representing a different species, and if space permitted that is what he would certainly do. But if sternly limited to one specimen, the best he can do is to discover which species has the biggest number of members and select that, as having the best chance of fitting into the experience of the greatest number of the readers of his dictionary. This point will be more fully dealt with when we come to consider types of humanity, for the term *type* may be regarded, for practical purposes, as an equivalent for *generalized image*.

Many people do their thinking by means of these generalized images. Your profound philosopher has a deep-seated contempt for this sort of concrete thinking. Hutchison Stirling, for example, finds it hard to speak peaceably about folk who carry on their thinking in this pictorial way. But the truth is that we all do a certain amount of our thinking by means of such mental pictures. We have all at our disposal a great number of generalized images that we call up when the need arises. Most of us have generalized images of a great many animals, places, and things that we call up when these form subjects of discourse. It is true that we do not need to recall them on all occasions. A great deal depends on our familiarity with the matters in question. A pork packer, or an importer from the Orient may carry on his counting-house business with very few pictorial reproductions of pigs or Persian rugs. But if a general conversation in society occurs on either of these subjects it will be found that most of the talkers develop some sort of picture of pig or rug, and that the picture of the expert has greater definiteness than those of the nonspecialist talkers. But even here we have to be careful to avoid confusion. An artist and a biologist might be present, and these might have equally definite, though quite different, presentations. What we have to keep clearly in view is that the inner world of each of us is made up of different elements, in different arrangements according to the circumstances in which we live. We shall be able to go more into detail on this matter when we take up the relation between ideas and words. In the meantime we must deal with the concept as the final element in our series of five.

We have already seen that the concept seems to have a power of its own: we have described it as dynamic. But we have warned ourselves that this power is not inherent in the concept but has been imparted to it by the psyche in which it originates. It is rather a possibility than an actuality. It is a power of dealing with certain elements of experience as they arise. It may even be suggested that the concept should be regarded as being a sort of limited faculty that keeps us in touch with the outer world. What are commonly called faculties have nothing to do with the material on which they act in the outer world. When we remember it does not matter *what* we remember, so far as the faculty is concerned. The business of the faculty of memory is to remember; its function does not include an explanation or criticism of what it remembers. Let the psyche see to that. So the faculty of perception has to perceive, and having perceived pass on the results to the headquarters of the psyche, whose business it is to make what use it sees fit of the material supplied. And so all the way round, among the recognized old-fashioned faculties. The psyche is self-contained, and all the so-called faculties are means at its disposal to get into touch with the outer world.

It is true that the faculty of sensation is so modified as to discriminate among the material to which it may be applied. Sight can deal with only one aspect of the outer world, hearing with quite another. But even here each of the senses, while limited to a definite range, is passive within that range, and reports to the psyche quite impartially what it observes, and leaves it at that. It does no inner-world building.

The psyche with its battery of faculties may be regarded as a self-contained and independent organism. We can figure it, if we please, as apart from, and quite free from any necessary entanglement with, the outer world. A French philosopher, called Condillac, had the fancy of imagining man to be a creature developing from a purely inert state to one of the activity we find in daily experience. He begins by imagining a statue devoid of all sensation and gradually developing sense after sense till maturity is reached. Condillac does not quite play the game, for he assumes each sensation to develop separately, and when he is dealing with one sense he assumes that the others are not working. He turns off seeing or hearing or smelling just as if he could turn them off like electricity by pressing a button. Now suppose we had Condillac's statue after it had come to full life, but had had no experience of the world, it may be assumed to have all its general faculties in full working order. But by exercising them separately it would never get further forward in the way of making itself at home in its surroundings. The senses no doubt would at once begin to bring in material, but the reaction of the newly vitalized psyche on this material would produce a change in the state of the whole organism of such a sort as would enable the psyche to feel at home in its surroundings, and to acquire more and more command over those surroundings. The configurationist would find here an excellent field for illustrating his principles.

ENVIRONMENT AND THE PSYCHE

The inevitable metaphor of building the inner world now presents itself, and the natural result is a search for building material. It is here that the concept offers its services. All the ordinary faculties retain their place within the psyche, their work is as it were done "on the premises," but the concepts result from sorties made from Mansoul. They bring back knowledge with them that enables the psyche to behave intelligently in relation to outside areas with which no communication was possible before the sortie. The greater the amount of varied experience, the wider the range within which the psyche can behave intelligently. The elements of the outer world are reduced to a series of concepts each of which is really the capitalized results of the reaction between the psyche and one or more elements in the outer world.

It is obvious that this interaction between the psyche and the environment must produce a definite effect on the nature of the psyche. We cannot assimilate the outer world in this way without showing traces of the process. Not a bad definition of education would be: absorbing our environment and at the same time being absorbed by it. It is really because people have always dimly realized the importance of this absorption of the environment that the communication of knowledge has been so generally regarded as the essential element in education. The mistake they have made up till now is in failing to select the right kind of knowledge.

Suppose we change our base now, quit the Condillac statue, and take an ordinary mature person, we find him a compact, self-contained organism furnished with a more or less efficient inner world that enables him to react in an intelligent way in his dealings with the outer world. His inner world resembles in a great many ways the inner world of his fellows. So far as the ordinary faculties are concerned the resemblance is perfect. His sensations, perceptions, judgments, imagination and what not resemble perfectly those of other people. No doubt they differ materially in the degree to which they are developed as compared with those of others, but they are essentially alike. They act in exactly the same way, though perhaps with different degrees of energy and efficiency. They obey the same laws, including those Laws of Thought as Thought that have such a steady influence on all psychic process, as we shall find in Chapter XIII.

It is when we come to the concepts that we have an element introduced that connects the psyche with the external world.

Perception brings us into direct contact with the outer world, but it is conception that works up the material supplied so as to make it a part of our very nature. Conception by itself remains empty; it has all the appliances necessary to build up an inner world but it has no material. As soon as perception brings in the raw material resulting from reaction upon the outer world, conception takes it in hand and works it up into the warp and woof of the psyche, which accordingly takes colour from the contribution from the outer world. Thus it comes about that the inner world finds itself under the control of certain laws quite different from the Thought Laws. What are called the Laws of Nature begin to have force in the inner world, because that world is modelled on the outer. Each of our concepts that is correlated with the outer world carries into the inner world all the restrictions imposed by the laws that dominate the outer world. It is in this way that the inner world acquires content, and the nature of this content colours the nature of the psyche as a whole.

Suppose it were possible to superimpose a hundred inner worlds, as found in a hundred different psyches upon one another, it would be found that there is a large area common to them all. Whatever the special environment in which each of the psyches carries on its existence, there is a vast number of elements common to them all. In other words there is a certain segment of the outer world that is common to all inner worlds wherever they are found. But the peculiarities in the environment are sufficient to give an individual character to each inner world, no matter how alike the two environments are. People living in the same town have characteristics that mark them off from people living in other towns. People living in the country have different inner worlds from those living in cities. We speak easily of the city mind, the bucolic mind, the suburban mind. We carry the idea further and speak of the professional mind, the lay mind, the legal mind, the ecclesiastical mind, the pedagogic mind, all this implying inner worlds different enough to be clearly distinguishable from one another. Such differences in the environment as are indicated by locality, climate, political or religious affiliations, social and racial traditions all have their effect in determining the nature and functioning of the inner world. To our dealing with the outer world we bring all our qualities that are the common property of every human being. These qualities, powers, faculties, call them what you will, act in a different way according to the bias given to the inner world by the environment on which it was founded. We might say that the whole inner world in the case of any individual is a sort of working model of our universal "faculties" in their relation to the outer world *as known to us*.

This inner world as thus represented is somewhat shadowy, rather undefined. It is necessary to pull it together a little in order to get a better grip of it. In a very real sense it is a possession of the psyche, but it may be also regarded as the psyche itself in one of its aspects. It is not so much that we have an inner world, as that we *are* that inner world. We have already seen that each ego is really the centre of the universe whether it will or no, so this inner world, which may be regarded as a filled-out ego, must be treated as a little cosmos that includes all that the faculties and concepts can weld into an organic whole. The inner world is really the psyche looked at from the point of view of its reactions on the outer world. It may be said to be the cognitive aspect of the ego.

CHAPTER VII

TEMPERAMENT AND TYPE

The Old Humours Classification—Two Kinds of Nervous Temperament—Are Women Sensory or Motor Types?—Bodily Characteristics and Temperament—Fouillée's Classification—Other Attempts to Classify Types—Introverts and Extroverts —Can Temperament Be Modified?

FEW psychological terms have such a free run in popular speech as *temperament.* The plain man may not be able to give an exact definition, but he is able to talk intelligently about it, and indeed uses it frequently in ordinary conversation. He tells us that the leader of the local Philharmonic Orchestra "certainly has temperament"; he makes excuses for the eccentricities of genius, by speaking indulgently of "the artistic temperament"; or he explains that he has no use in his office for people who are "temperamental." Psychologists are perhaps less vague but certainly more quarrelsome about the subject. The one matter on which they are agreed makes an excellent starting point for a businesslike treatment. There is practical agreement among the writers on the subject that, whatever else it means, temperament always takes account of a physical basis. It is regarded as the direct result of the nature and working of the bodily constitution. The word *disposition* is now and then loosely used to indicate something not far removed from temperament as usually understood. A man's attitude toward life, his way of looking at things and reacting to them, is regarded as an expression of his disposition. But on looking into the underlying meaning attached to this term, we find that there is here also a certain correlation with the bodily structure of the person whose disposition is in question.

Going back to the derivation of the term *temperament,* we find that *temperamentum* in Latin means "a mixing in due proportion." Naturally, this leads us to inquire what elements are to be mixed in the case of what we call temperament, and thus we come to "the humours." We are carried back to the old classical times, where we get into touch with famous old physicians whose names are still familiar to us. Two of them stand out in particular: Hippocrates and Galen. The first rejoices in the title generally accorded to him, "the Father of Medicine." He lived between the years 460 and 357 B. C., while his great follower and exponent had his day from 130 to 201 A. D. Both are associated with the humours theory that interests us here. But perhaps preference should be given to Father Hippocrates, who first laid stress on the four humours. These are the blood, the colourless fluid sometimes called phlegm, sometimes lymph, and the two biles—one of them called the yellow bile, and the other, a more virulent form, known as the black bile. According to Hippocrates, when these four fluids are mixed in the body in their proper proportions everything goes smoothly. Those who like to get a name for all things will be pleased to know that this satisfactory state was called *crasis.* Hippocrates had a great variety of other names for various interactions among the fluids, but we cannot penetrate very deeply into the business of our friends the doctors, so we had better keep to the effects the humours were assumed to have on the psychological side.

THE OLD HUMOURS CLASSIFICATION

The scheme was worked out during a long series of centuries, but its general result was that a different temperament was assumed to result according as one or other of the humours got the upper hand in the bodily constitution. If the blood was in the ascendant the resulting temperament was the *sanguine,* the characteristics of which were vivacity, love of movement, light-heartedness, hopefulness, rashness, impatience.

When the lymph (or phlegm) had the commanding position the resulting temperament was known as the *lymphatic* (or *phlegmatic*). This was marked by qualities opposite to those that characterized the sanguines: slowness of movement, dullness, weakness where sustained effort is called for, gentleness, placidity, lack of fuss.

The *choleric* temperament (*cholé* is the Greek word for *bile*) was said to result from the predominance of the bile. Its characteristics were such matters as ambition, stubbornness, love of work, energy, courage.

When the black bile got its hand in there appeared the *melancholic* temperament, the marks of which were depression, sadness, dark-sidedness, reflection, humility.

It is interesting to note that in their progress down the ages these classical temperaments have acquired a sort of independent moral grading apart from their original meaning. People in general have a preference for some of the temperaments and an abhorrence of others. As the result of questionnaires applied to various groups of students of all standings, I am in a position to report that at the university stage of life the rank of preference places the temperaments in the following order: sanguine, melancholic, choleric, lymphatic. Most of us think we are particularly cheerful persons, and in all probability more people class themselves under the sanguine head than under any of the others. The term *melancholic,* too, has a sort of false attraction which it loses as soon as the literal meaning of the term is realized. Few amiable young ladies have any serious objection to being called melancholic at certain stages of their career, but at no stage would they be willing to be called *atrabilious.* Yet the two terms in their literal sense mean precisely the same thing, which may be expressed as *black-bilious.* The Greek form, melancholic, has a pleasant sound and a not unpleasant association, while the Latin form, atrabilious, though it has exactly the same reference to black bile, has a sinister sound and an ugly association. Even Carlyle did not like to be called atrabilious.

Looking deeper into the meanings *popularly* attached to words indicating the four temperaments as determined by the humours, we note that they do not quite correspond to the qualities set down against them by sober psychologists, as presented above in describing them. In particular, it has to be noted that each of the temperaments has good as well as bad qualities. If the sanguine is light-hearted he is also rash; if the lymphatic is dull he is at least free from fuss; the melancholic may be sad, but he is humble; the choleric's stubbornness may be offset by his courage.

A rather wonderful thing about this humours classification is the length of time it has endured. We may well ask how this quaint theory has survived long after its basis has been discarded. The explanation is to be found in the grip the descriptive terms have got on the human mind. There is something picturesque in the scheme, and it has a pleasantly concrete basis. Like so many other of our popular modes of classification it is little more than a huge metaphor. But figurative as it is, it makes a strong popular appeal. The temptation to hypostatize here as elsewhere is very powerful. But at the present day it cannot be denied that the theory as theory has completely collapsed. Why then do we keep on speaking of temperaments in terms of the exploded theory? The answer is to be found in the fact that the humours theory and its applications have dug themselves into the literature of the world, and the terms dealing with the temperaments have become a part of the language of the world. They have got incorporated in the organized mental content of civilized humanity. The humours may not justify themselves as the physiological basis of temperament, but they have fought their way into the popular imagination and the popular speech. Probably a famous book, Burton's *Anatomy of Melancholy,* has exercised a very powerful influence in popularizing the humours view, but it is only one of many such influences. The poets and dramatists have all done their share in popularizing this picturesque way of presenting the temperaments.

After all, no great harm has been done by this widespread metaphor. Nobody nowadays takes it seriously. All we need to do in the matter is to expose the fundamental fallacy on which it is founded, and then proceed to make a reasonable use of the vocabulary of the antiquated theory. No one to-day is in any way deceived by the misleading terms of the humours classification. We do not even think of the fluids, to say nothing of having our psychological views corrupted.

Still, modern psychologists cannot quite indorse the humours theory, though they are quite willing to use its terms in their own everyday speech. Even if it were justified on a physiologico-psychological basis it would probably be felt that the fourfold classification is a little too complicated for popular use. Accordingly, the new classification adopts a twofold form. This is quite a fashionable plan. There is something pleasantly epigrammatic about this dual classification. Charles Lamb supplies an excellent example of the literary application of dichotomy. His "Two Races of Men" splits humanity into the two great groups: those who borrow and those who lend. The French cynic is equally drastic when he dichotomizes mankind into the two great companies of those who love and those who let themselves be loved. But when it comes to dichotomizing the human race on a psychological basis, epigram must be set aside and a reasonable basis of classification adopted.

TWO KINDS OF NERVOUS TEMPERAMENT

Since the humours have failed him, the psychologist naturally turns to that part of the bodily make-up that has the closest connection with the psyche. The nervous system supplies by far the most promising basis of classification of humanity from the psychological side.

The whole of the nervous matter in the body may be grouped into two sections according to the function it performs: *elaboration* or *communication*. The brain is the great centre of elaboration, but it is not the only one. All along the spinal column, in the heart, and elsewhere in the body there are centres where subordinate, limited, but very important, elaboration is going on. These centres are often compared to receiving centres in a telegraphic system, where messages are received and, if need be, answers sent back. To complete a telegraphic system there must be an enormous elaboration of organized wire-work that makes up the communicating part of the whole.

Within the body we have a corresponding system of nervous filaments whose function it is to do the carrying of messages from one part of the body to another. These carrying nerves are named according as they carry messages from without inward or from within outward. The first set are called *afferent* nerves, the second *efferent*. At this point a great many physiological questions may be asked that it is not our business here to answer. It may be asked, for example: "Is it not possible for the same nerve to be both an in-carrying (afferent) and an out-carrying (efferent) organ, just as we are now able to use the same wire both ways in telegraphic communication?" During my life I have heard many answers to this question and am glad to leave the matter for the physiologists to settle among themselves. It does not really concern us. For our purpose it is enough to determine that any communicating nerve at a given moment is either afferent or efferent. It may be both at the same time for all we care; in any case it belongs to the communication class of nervous matter.

This dual classification of nervous communicating matter is sometimes indicated by two different names. Since the in-carrying nerves communicate from without certain information supplied by the senses they are sometimes called sensory, while the out-carrying nerves, since they go to muscles and lead to some movement or other, may be called *motor*. (It is true they sometimes end in glands, but the name was given before glands came into the limelight.) Here again physiologists may point out that there may be in-carrying and out-carrying nerves inside between different parts of the body, without coming in contact with the sense organs at all. If this be so, again it does not greatly concern us; the trouble is not on our beat. So we may be permitted to raise our hats in respectful thanks for the information and pass on to our real business.

We come to the point that really touches us when we learn that the dual classification is based on the distinction between the two kinds of communicating nerves. Men fall into the two classes of *sensories* and *motors*. The point of the classification is not at first evident, for all men are supplied with practically the same sets of sensory and motor nerves, so the distinction is not anatomical. Nor is it functional, so far as local distribution is concerned, for both functions are carried on—in-carrying and out-carrying—in sensory and motor persons alike. Motors have to receive sense impressions, and sensories have to send out messages leading to actions.

The real difference occurs at the elaborative centres, though the names are taken from the communicating nerves. When an afferent nerve has brought in its message the elaborative centre takes the matter in hand and determines what is to be done. The result may be a purely negative one. The centre may determine "no action," and the incident is closed. But on the other hand it may determine "instant action," and a message may be whizzed along the appropriate efferent nerve leading to immediate activity. We all know that in a great many instances a definite reaction *immediately* follows on a stimulation of a particular kind and that this is called *reflex action*. But we are now dealing with a grade just a little bit above the purely automatic reflex. There is room for elaboration, though there may be usually no need for it. The vast majority of our actions above the reflex level are carried on so rapidly that there is no apparent delay between stimulus and reaction, but there always is *opportunity* for this delay, and in the manipulation of this opportunity lies the differentiation between the sensory and the motor temperament.

The description of a person of motor temperament is that he responds to all stimuli with very prompt reaction. He is sometimes credited with a great deal of what is technically called *motility*, but this is a rather question-begging term and adds nothing to our knowledge of the temperament. All that is implied is that a person with this temperament responds at once to stimuli. A suggestion of any kind leads to immediate action. For him, knowing is but the anteroom of doing. In thinking he is very apt to jump to conclusions. In school, successful teachers are most careful, in dealing with pupils of this type, to have everything prepared for action before any activity is even suggested to a class. The natural result of this inherent tendency toward precipitancy is a high degree of susceptibility to error. But as a compensation the vivacity and quickness of such pupils give them a certain prestige in the eyes of teachers and fellow pupils.

On the other hand, the sensory pupil is apt to get credit for some degree of dullness, even stupidity. For his characteristic is to allow a certain amount of time to elapse at the elaborating centre. When a message comes in by the afferent nerve his tendency is to allow a certain lapse of time to occur before he causes the answering message to flash along the efferent nerve. Such a person is inclined to take matters "ad avizandum," as the judges say when they want more time to consider a case before giving a decision. Not infrequently the final result is no action at all.

A certain difficulty may be raised here, for the general impression has been conveyed that the motor person does more work than the sensory. One would expect that the work done by the two sets of nerves ought in some way to balance. In the debit and credit account there ought to be some sort of compensatory system by which the energy budget of the human system may work satisfactorily. As a matter of fact, this is arranged by the simple process of cancelling out the positive and the negative sides of the ledger. It is true that the motor is often on the edge of action, eager to go, while the sensory appears to be doing nothing at all. But the process of elaboration, involving, as it always does, some degree of inhibition, demands from the sensory a definite expenditure of energy in the mere refraining from action that may well balance the amount expended in actual activity by the motor. Under certain circumstances holding one's tongue and doing nothing involves a considerable output of energy.

ARE WOMEN SENSORY OR MOTOR TYPES?

An interesting attempt has been made by an American psychologist, J. M. Baldwin, to correlate these temperaments with the sexes. He believes that one sex is predominantly motor, the other predominantly sensory. By making various classes of university students vote on this point, before Baldwin's view was presented to them, I have found that the majority of students (60 or 70 per cent. in most of my tests) believe that women are sensory and men motor. This is not Dr. Baldwin's view; but we are not to put a snap vote taken during class hours from university students, even though the classes were large and the occasions of testing numerous and varied, on the same level as the reasoned opinion of a well-trained and ingenious observer. The explanation of the students' vote may be found, I believe, in the misleading suggestion of the word *sensory*. It has a certain affinity with the term *sensitive,* and thus points naturally to woman, while the word *motor* carries with it a hint of outdoor activity that used to be associated mainly with men.

But against the view of Baldwin, and on the side of the students, we may place the conclusion of a French psychologist of high standing who takes the view that women are sensories and men motors. Dr. Alfred Fouillée's argument is physiological. In the process of metabolism that marks the vital processes of men and women alike, the katabolic or breaking-down process is more prominent in men than in women, whereas the anabolic or building-up process plays a bigger part among women than among men. Indeed, Fouillée calls women "the saving sex" and men "the spending sex"—of course he is speaking from the standpoint of physiology, not of economics. Since the sensory temperament is more associated with anabolic processes it naturally follows that Fouillée reverses Baldwin's classification (without in all probability ever having heard of it) and makes men motors and women sensories.

When doctors thus differ we probably shall not go far wrong in maintaining that among children Baldwin's classification holds, while among men and women there is not sufficient evidence to decide either way. We all know that at school, at any rate at the earlier stages, girls are quicker at learning than boys, and quicker at most other things as well, and that they are a year or two ahead of boys in the general process of growing up. All this is in favour of the sensory nature of boys. But in the case of grown-ups the evidence is all in favour of a not-proven verdict, though the problem certainly holds out alluring possibilities in the way of more or less friendly debate.

As one looks into the old-time humours classification of the temperaments, one is struck by the fact that custom has read into the terms meanings that were not originally there. To the present-day Englishman the word *choleric* calls up the picture of a retired Anglo-Indian colonel, with a brick-coloured face and a violent temper. This does not at all correspond to the description we have given of the characteristics of the temperament, nor does the lackadaisical pale-faced poet correspond more closely to the description of the qualities of the melancholic. It may therefore be worth while to look into the matter a little more closely.

BODILY CHARACTERISTICS AND TEMPERAMENT

Prepared as we have been by the previous indication of the close connection between temperament and the general constitution of the body, we need not be surprised that attempts have been made to express temperament in terms of bodily qualities. At first sight the scheme must appear to the practical minded as hopeless, and yet the most practical of people in the ordinary round of their daily life are acting on a system that differs from what is about to be indicated here only by the comparative carelessness with which the popular plan is applied.

In sober earnest all of us, more or less wittingly, adopt at sight certain impressions of the nature of those with whom we come in contact. We are all familiar with the intriguing lines:

I do not love thee, Dr. Fell,
The reason why I cannot tell;
But this alone I know full well,
I do not love thee, Dr. Fell.

But we seldom take the trouble to make any application of them to our ordinary life. Often we feel about some of our acquaintances as the versifier felt about Dr. Fell, and we are content to let it go at that. But none the less we are prepared to accept our apparently unfounded dislike and act upon it. We form impressions by what we sometimes doubtfully call instinct, and the main thing that strikes us about the matter is the frequency with which those unjustifiable impressions are ratified by what later experience brings. The great power of first impressions can be explained only by the assumption that we see more by general inspection than would appear to be possible. We are frequently warned not to judge a person by these first impressions, and the reason usually given is that character is far too complex a thing to be estimated by mere inspection. But what we judge in those characteristic first impressions is not so much character as temperament. Consequently it is not a matter of respecting or contemning but of liking or disliking. We may respect a person extremely and at the same time dislike him intensely. Most of us could point to more than one person of our acquaintance whom we esteem in the highest degree, and to avoid meeting whom we would willingly walk a considerable number of miles. In our first interview with a person we often find temperament answering to temperament, either by attraction or repulsion, even while the judgment remains quite neutral. Love at first sight is a case in point.

It is true that some people who do not like the idea of making up their minds by instinct have gone the length of tabulating certain external qualities that go along with corresponding personal characteristics that are probably temperamental. The novelist indeed has quite a vocabulary to cover this field, each term of which has a definite technical meaning recognized by his readers. *A weak chin, a massive jaw, a mobile mouth, a broad brow, a quiet eye, sensitive nostrils,* have all a conventional meaning, which, being recognized, saves a deal of explanatory writing.

To be sure, intelligent people are a little ashamed to deal with such terms at all, and sometimes save their dignity by sneering at those who supply the vocabulary that nevertheless they find practically useful. On one occasion in London a distinguished savant on an appointment committee wanted to express the opinion that a certain candidate would not be a suitable person for a post that was vacant. At first he would give no reason for his opinion, but on being pressed he explained that the candidate in question "had what the newspaper men call a 'weak chin.' " In plain English he felt that the man bore the mark of certain qualities, but being a man of science this member of committee could not be expected to subscribe easily to a popular theory.

There is here, indeed, an excellent illustration of the relation between awareness and the lack of awareness in knowledge. A great deal of our most useful knowledge has been acquired without its ever having been focussed in consciousness. In school the use of stated lessons, of formal revisals, and above all of examinations, is to give just this conscious presentation of pieces of knowledge that it is considered necessary that the pupils should acquire and retain. The parts of knowledge that teachers thus deliberately isolate and focus are precisely those that would not otherwise have found their way into the field of our knowledge. Without conscious effort we do not happen upon a knowledge of Latin, or chemistry, or mathematics. On the other hand, there are certain kinds of knowledge that are of such fundamental importance to us in life that Nature sees to it that they are mastered whether there be formal teaching or not. Among these appears to be the knowledge of the connection between the outer appearance and the inner nature of man. The knowledge is vague but impressive. It seems to have no rational foundation but it produces such a powerful effect that it is usually acted upon.

Naturally, your scientific man is not content with this naïve impressionism. So we find attempts to introduce something like order into the connections between temperament and external appearance. The early studies of Lavater need not detain us, though they greatly impressed many of his contemporaries by the ingenious way in which he correlated the peculiarities of various elements of the human physiognomy with certain qualities of the personality. The nose in particular gave Lavater certain definite hints about the combativeness of the individual concerned. Few of us have now any faith left in phrenology, but a great many of us would like to believe in it. Nothing could be more convenient than a scheme of bulges on the head that could be read off so as to give a reliable analysis of the qualities and peculiarities of the person in question. There are indeed those who set up a private system of symptoms to indicate qualities in this way, who obstinately believe in their system and apply it in their lives. A German Doctor of Philosophy who taught German in a British high school had the opinion that he could test the potential troublesomeness of his new boy pupils by the fineness of their hair. The finer the hair the more troublesome the pupil. The maximum of troublesomeness was indicated by the presence of two centres of the hair system of the head. Most boys are content with one centre where the hair is apt to stand up rebelliously in spite of all that water and hair oil can do to keep it down. When two of these centres appeared it was time, thought the German doctor, for the teacher to be specially on his guard.

FOUILLÈE'S CLASSIFICATION

All this is felt to be beneath the serious attention of men of science, but when a man like Alfred Fouillée discusses the physical indications of temperament it is time for us to take notice. In his book entitled *Tempérament et Caractère* he evolves a complete system of temperament classification in which he includes both the humours basis and the nervous, in the following form:

Sensories	with prompt reaction	this corresponds to the old	sanguines
	with intense reaction	“ “ “ “ “	melancholics
Motors	prompt and intense	“ “ “ “ “	cholerics
	slow and not intense	“ “ “ “ “	phlegmatics

It will be noted that this classification lacks that symmetry that usually characterizes French philosophic writing, and it is clear that Fouillée is not pleased at this lack of tidiness. But he is evidently driven to this form because it is the only one that fits in with his general scheme.

What concerns us here is that he makes a study of the physical characteristics that mark off each of the four groups into which he divides the temperaments. Here Fouillée is not willing to depend on mere observation. Like the good Frenchman that he is he wants to have a theory to guide him. It may be a weakness of the French, this desire to have a cut and dried theory for everything, but it is certainly an interesting one. The theory on which Fouillée here works is that the temperaments are distinguished from one another by the way in which the two processes, *anabolism* and *katabolism,* are related to one another in the physical system. We have seen that he identifies the motors as a whole with katabolism, or the breaking-down process, and the sensories as a whole with the building-up process, or anabolism. Now he goes further and works out the physical characteristics in accordance with the physiological facts connected with these processes. For example, an abundant supply of red blood corpuscles is characteristic of physical constitutions in which anabolism is prominent, and he tells us accordingly that the people who are definitely sensories have ruddy complexions caused by the red corpuscles showing through the skin. On the other hand, the pigments that go to colour the hair, the eyes, and the skin are the result of a process of katabolism. As a result we have the motors marked by brilliant dark hair and eyes. Accepting the fourfold classification of the temperaments, the following is a condensation of Fouillée's description of the physical characteristics of each:

SANGUINES: Complexion pink and blooming; skin white; hair oftener light than dark; eyes light coloured, generally blue; neck short and thick; head not pointed, generally round or square; body well nourished; nose strong and large.

MELANCHOLICS: Complexion paler than sanguines; physiognomy expressive and mobile; skin white; hair and eyes light coloured; neck delicate and long; nose rather thin; nostrils very mobile; body lithe, often dry, seldom fat; shape of face inclined to resemble letter V.

CHOLERICS: Face ordinarily pale; skin often brown and olive-coloured; hair and eyes often dark and brilliant; body sturdy but dry; deep sleepers; plumpness rare; emotions lead to pallor rather than to flushing and often have a direct effect on the liver—a fact that struck the ancients and had something to do with the name *choleric*.

PHLEGMATICS: A certain flabbiness of body; nose broad; neck generally short; complexion without strong colouring and lustreless; hair sparse, blond or light brown; beard absent or with little colour; eyes gray or green without brilliancy.

This classification, as we have noted, is not quite what we would have expected from a French writer, but in his text

Fouillée rather pulls things together by his running commentary and makes the reader realize that there is a causal connection among the different elements that seem so unrelated in the above groups. As to the number of temperaments, Fouillée does not seem so wedded to four as Kant appears to be. Speaking of temperaments, Kant says, "There are four of them in all, as there are four figures of the syllogism, determined by the middle term," and again, "Each of them is simple: one cannot say what would be the use of a man who should have a mixed temperament." On the other hand, one might reply by asking what sort of world we would have if we were all of pure temperament. In point of fact, it is very rarely indeed that we can honestly say that any individual we study is a pure temperament. If the temperaments can be classified in such a way as to enable us to group human beings in a tolerably effective way, we have got from them all we have any right to expect. The old proverb tells us that it takes all sorts of people to make a world, and people are certainly supplied in sufficiently marked variety.

OTHER ATTEMPTS TO CLASSIFY TYPES

So great, indeed, is the variety, so wide the range of difference among human beings, that men fall naturally into a sort of rough and ready classification according to the outstanding characteristics of groups of individuals. This general tendency works in a different way from that which has produced the classification by temperament. There we have a definite foundation of classification, the physical basis on which human disposition depends; there is room for investigation and more or less scientific theorizing. But human nature wants quicker and easier methods, so has throughout the ages set up a sort of rough and ready classification that is less scientific than artistic. As the use of words is a kind of longhand way of expressing our views about men and things, so the use of types may be regarded as a sort of shorthand way of dealing with them. By what we have already considered under the name of the generalized image, we are prepared for a treatment of types. When we want to *represent* a whole group of objects by one individual object we naturally select one that is most like the greatest number of them. Many people are inclined to say that what we want is the *average* individual, but that is not a very happy way of putting the case, for it introduces an arithmetical element where arithmetic is out of place. Statisticians now distinguish between two totally different things that are used to give guidance in dealing with individuals and groups. The first is the familiar average, the second is what they call the *median.* The average is obtained, as everybody knows, by adding together all the separate items and dividing by the number of individuals. To get the average age of a class in school the teacher adds up the ages of all the pupils, usually in months, and then divides by the number of pupils in the class. The result is that in very many cases there is not a single pupil in the class who has the exact age discovered to be the average of the whole. On the other hand, there are a great many pupils just round about the average, and that age that has the biggest number of pupils close round about it is called the *median.* Technically the median is the midway point between the two halves of the total number of cases.

The practical importance of the distinction is to be found in such a case as a jury setting about finding what fine or compensation should be awarded in a particular case. The twelve jurymen often set down each on a piece of paper the amount he thinks proper, and these sums are added up and divided by twelve, and in many cases this is accepted as the just amount as determined by the deliberate consideration of the jury. But suppose there are one or two extremists among the jurymen, one suggesting ten thousand dollars, the other two hundred dollars, while the remaining ten choose numbers running round about two thousand dollars, five of them voting for exactly two thousand dollars, the attempt would be made to get the two extremists to accept two thousand as the final award. This would be said to be accepting the median.

Now the type may be said to be a sort of median, an individual member of a group that gathers up in itself the greatest possible number of qualities common to all the members, and that may therefore be reasonably chosen to represent or stand for, the whole group. Human beings fall easily into groups that have a certain affinity with one another, and all of us are interested in noting this natural gathering together of people having common characteristics. "Birds of a feather flock together," we say, and from time immemorial clever persons have been found who interested themselves in classifying people in this way, and representing the groups by skilfully sketched individuals.

Away back in old Athens we had a sort of apostolic succession of philosophers. The first three of these are known to everybody. But when they have named Socrates, Plato, and Aristotle most people take a breath and wonder who in the world comes next. But the knowing ones are ready to tell us that when Aristotle gave up business at his college, The Lyceum, at Athens, he passed on the goodwill of the business to a certain Theophrastus, who proved a very successful teacher and wrote a great number of books, many of which failed to survive. Among those that successfully ran the gauntlet of time and have come down to us there is one called the *Ethical Characters*. It appears to have been published in 288 B. C., but it has a remarkably modern air about it. Various types of men are there set forth much as we might depict them to-day: the greedy man, the lazy man, the ambitious man, the bore. Most of us who have gone through the turmoil of a college education have vague recollections of some such sketches in the college magazine. For this style of writing makes a strong appeal to the undergraduate. G. Stanley Hall would have gloated had this fact been brought to his notice, as it illustrates the application of the doctrine on which he used to lay such stress, the doctrine that the individual in his course through life repeats in his own person the stages through which his race has passed.

The next world-wide writer of types belongs to France. La Bruyère in 1688 produced his famous *Characters of Theophrastus, Translated from the Greek, with the Characters or the Manners* [*Mœurs*] *of this Century*. Nominally a translation, this book is much more and supplies a Seventeenth Century reproduction of the work of Aristotle's successor. The difference between the two works is that La Bruyère appears to have had individual real persons in view when he wrote his *Characters*. But for our purpose this rules him out altogether. His puppets are no longer types, they are portraits.

But there were plenty of writers of *Characters* at that time to supply us with all the examples we need. Between 1605 and 1700 we are told by Professor Hugh Walker no fewer than fifty-seven such *Characters* were produced in England alone, and Dean Greenough of Harvard University has in his notes close on 1200 such books, pamphlets, and sketches. The point of this is the universality of the desire to give what may be called concrete presentations of abstractions. In the history of the drama, indeed, we find a visible manifestation of the tendency toward the concrete. The morality plays, in which virtues and vices were personified on the stage, supply a concrete exemplification of the process of hypostatization.

It has to be kept in view that this typification of humanity is a dangerous process, and the results must not be taken too seriously. We shall find later that it is quite a useful process in economic and social life, when we apply it in a somewhat special and practical way. In the meantime it may be worth while considering a race-wide dichotomy that is making its way into public notice through the gateway of mental pathology. *Psychiatry* is the chilling label over this gateway, but the distinction drawn between pathological mental disorder and what may be called natural and respectable peculiarity is becoming so delicate that we can carry over some of the technical terms from the pathological dictionary to the lexicon of ordinary wholesome life.

INTROVERTS AND EXTROVERTS

The dichotomy that is pushing its way out of the mental prison house into the light of common day is the division of mankind into *introverts* and *extroverts*. Some people think it important enough to call the second group extr*a*verts—but suppose we just admit that the Latin word *extra* ends with *a*, and, having proved that we know this, go on balancing introvert by extr*o*vert.

What really counts is the distinction drawn between the two types of men indicated by the words. It is not yet customary in ordinary conversation to speak of introversion and extroversion. Indeed some still regard the terms as applicable only to diseases. But the whole tendency is to treat them as indicating a bias toward a special way of looking on life; and as this bias is certainly correlated with the physical make-up of the person concerned, there can be no great harm in adopting the terms as indicating something that is at any rate on its way to be recognized as a mode of classifying temperaments.

The characteristic of the introvert is a tendency to look within rather than without; to be content to be an onlooker rather than an actor; to avoid definitely committing oneself to any line of action; to shirk the responsibility of entering upon an entirely new line of action. The extrovert, on the other hand, is full of self-confidence in social matters; takes himself for granted as a *persona grata* wherever he goes, would much rather be an actor than a mere spectator; throws himself confidently upon society in the full expectation of being welcomed, wants to be taken into the confidence of everybody, and is equally ready to take everybody into his.

An English train is just starting; a five-a-side third-class compartment has nine occupants including an old gentleman in a window seat hiding himself behind an open newspaper. Just as the train is starting a bulky man clambers in and with the irritatingly apologetic query, "Room for a little one?" wedges his way downward to the vacant seat. But before he reaches it he has already started a conversation with the man opposite, and by the time he has expanded so as to cover more than his fair share of seating accommodation he is talking to everybody in the compartment—except the old gentleman, who raises his open paper to a somewhat higher level the more effectually to ward off the conversational attack that he fears is coming. For the old gentleman is as obviously an introvert as the late comer is an extrovert.

In ordinary society the two types in their extreme forms make themselves very evident, and when they are in their proper environment, as they very often are, they give rise to no irritation. Show me a popular preacher and almost certainly I shall be in a position to show you an extrovert. Successful actors are usually extroverts; popular actresses always are. An auctioneer almost has to be an extrovert, and an introvert realty man is not likely to make much headway. Bookkeeping, official shorthand writing, book auditing, chess playing, and library keeping supply excellent fields for the introvert. Most vocations demand a judicious mixture of both temperaments. A street policeman should be mainly extrovert, but if he wishes to be raised to the detective staff he had better cultivate his introvert side. A teacher demands an almost perfect balance between the two, with a bias, if there is to be any, toward the extrovert.

CAN TEMPERAMENT BE MODIFIED?

The last paragraph somewhat indirectly raises an important problem in connection with the temperament. It has been suggested that we may have to cultivate a certain type of temperament if we wish to succeed in specific walks in life. A knowledge of our own temperament is without doubt a great aid in choosing a vocation, but once we have made our choice is it possible to modify our temperament so as to adapt ourselves more perfectly to our environment? When we generalize the problem and ask whether temperament is modifiable we get varying answers.

Descartes tells us that there is only one way of modifying temperament, and that is the medical way. Since temperament is based on the physical constitution it seems perfectly natural that the proper approach to a change of temperament is by the body. There are others who hold that no change of temperament is possible. With the temperament we bring into the world we must do the best we can, and in any case we have to carry it out with us, for there is no temperament exchange bureau available within our three score years and ten.

Others take a very different view, and not only admit that a change is possible but that it is inevitable. The German psychologist Hermann Lotze, for example, holds that we all do change our temperaments in our progress through life. Each stage of our progress is marked by the dominance of one or other of the four classical temperaments. The child begins with the sanguine temperament. It cannot be denied that most of the characteristics that are associated with this temperament are to be found strongly developed in childhood. Youth—that is adolescence and the period immediately following it—may very naturally be classed as melancholic, if we permit the connotation of that word to include the dramatic and sentimental aspects that people in general, and poets and dramatists in particular, have succeeded in imposing upon this temperament. Vigorous maturity has perhaps a fair claim to the choleric temperament, though of course "hot-headed youth" may enter a caveat. When it comes to old age there will probably be found few to challenge its claim to the phlegmatic type.

While moving along these lines, we cannot but feel a sense of insecurity except in the case of the first and last stages. People who like a pleasantly quarrelsome discussion could not do better than take up the four classical temperaments, and Shakespeare's Seven Ages as found in *As You Like It,* and try to correlate the one with the other. The baby and the schoolboy make an excellent beginning, and the lean and slippered pantaloon and the "sans everything" make a comfortable ending with the phlegmatic temperament. But the placing of the soldier, the lover, and the justice gives rise to all manner of delicate problems that will supply discussable material for many a long winter evening.

The very difficulty in finding a fixed place for each of the Shakespearean ages would indicate that the temperaments are not quite so fixed as some think. But while the time element introduces this attitude of doubt the space element is not without its contribution.

Since temperament has a physical basis it would seem natural that physical conditions should have something to say about the kind of temperament developed in quite different geographical zones. The dark skins under the tropics may well be correlated with temperaments quite different from what we find under our cooler skies. The problem may be well studied under the conditions that mark the professional lives of white civil and military officials in tropical and subtropical dependencies. Does the temperament of a young subaltern change between the period when he goes out to India and the time that he retires as a colonel with a pension and a liver? The opinion of the unsophisticated person is that his temperament has undergone a serious change, but the critic does not venture to say how much of the change is due to climate plus diet, and how much to mere age.

Diet itself has been credited with producing quite specific changes in temperament. Certain crimes and unsocial habits are definitely correlated with certain kinds of food. Doctors have a rather soothing technical term for a kind of feeding that they recommend under some circumstances. The interesting point for us here is that this so-called "bland diet" has been found to produce excellent effects in lowering the ferocity of the temperaments of criminals undergoing imprisonment for bloodthirsty offenses. On a loftier plane, the defeat of the Italians at the battle of Caporetto has been attributed to the too exclusively vegetable diet imposed on the troops for a considerable time before the conflict. Obviously all manner of drug effects come in for consideration here. Whatever truth underlies the phrase, "Dutch courage" supports the Cartesian view that in medicine we find the most effective means of modifying temperament. The obvious criticism here is that the drug effect is so temporary. It may be not unreasonably claimed that it produces its effects for the moment only, and may therefore be said to modify temper rather than temperament. But the natural answer is that the effect can be made as permanent as you please; it is all a matter of time and frequency. You have only to attend a Band of Hope lecture illustrated by the pictures of stomachs—one the stomach of a confirmed drunkard, the other a beautifully working Band of Hope stomach—to see how the normal untainted physiological basis can become not temporarily but permanently changed. The possibility of making a Cartesian change in temperament may thus be regarded as demonstrated. We have only too many illustrations of the application of this modifying influence through the legitimate and illegitimate use of the pharmacopœia.

A question of first-rate importance remains: Can we by direct control modify our temperament? Here we are faced with a problem that has some points in common with the fundamental problem of all psychology, the relation between the subjective and the objective within the sphere of the ego. We act as we do because we have a certain temperament. If we are not pleased with the results we may want to change the temperament. The problem is: Can we do it? The temperament is not something outside us; it is a part of us. We and our temperament are one, so there is something like the old difficulty we experienced in one aspect of us dealing with another aspect of us in the process of introspection. There is this difference, however, that in our present problem we have an outside element introduced, since temperament has a physical basis. This consideration does not in any way alter the fact that temperament is an essential part of us, but it does introduce a definite approach to our problem. Since temperament has a physical basis there is an obvious means of influencing it. We have seen that this means has been adopted and has been widely applied in the modification of the temperaments of others. The problem remains whether we ourselves can apply the method in our own case. We are in a better position here than in the problem of manipulating our own spiritual processes, for we have something to deal with that is definitely outside of us and we can hardly claim that it is independent of us. We can adopt a bland diet, we can remove ourselves from one kind of climate to another, we can even have certain surgical operations performed on us, and in all those cases we may cause a definite change of temperament.

Point is given to these considerations by all the talk we hear to-day about those ductless glands that appear to exercise a very definite influence upon temperament. If we are to believe the physiological psychologists we are coming to a point at which we shall be able more than ever before to regulate the temperaments, and so far as the suggested methods are applied from without they can be used by the individual to manipulate his own temperament. But here obviously the temperament of the individual in question must have a good deal to do with the way in which he approaches his problem; in other words the temperament must play a part in its own modification, and the degree and kind of modification must be limited by the fact that the temperament works on both sides of the process. Will the lymphatic temperament of a person allow him to see the advantages of the choleric type and let him make the necessary arrangements to secure a movement in the choleric direction?

It may be suggested that in the psychological trinity the knowledge element plays the part of mediator between feeling and willing. The intellect may discover the unsatisfactory relation between certain acts and their affective results and suggest means of establishing a better relation, and the psyche as an organic unit may set about giving effect to this suggestion. We know that the psyche has a certain power of affecting bodily actions and reactions, just as the body has a similar power in relation to psychic processes. We have weird stories told of the power of the psyche to produce in the body certain definite effects, sometimes even actual sores. Without accepting evidence of this kind as gospel we may fairly claim that the psyche can so react on the body as to resist tendencies, whether positive or negative, arising from physical causes. After all, the temperaments result in tendencies, not definite states or acts, and the psyche has the general control that at any rate can establish a bias in the direction it favours. It goes without saying that a temperament cannot be changed overnight, and that a person can never completely change the physiological basis of his temperament. But by a steady deliberate enforcement of reactions that the intellectual aspect of the psyche approves, a new bias may be imposed on a temperament.

If a man of motor temperament deliberately restrains himself when impelled to immediate action, and the man of sensory temperament makes up his mind that he must respond more quickly than is his custom, no harm is done, and nothing unnatural results. In all probability each temperament will remain a characteristic of the person till the end of life, but a sufficient modification may be imposed to enable him to make the best use of that temperament. Naturally, there is a certain danger involved in a deliberate attempt to modify the nature of either ourselves or others. What is usually called education sometimes illustrates this danger. Some teachers with the best intentions in the world take a wrong turning here. At a teachers' conference in Wales the speaker, a Mr. Ebenezer Jones, had made an eloquent address which pleased his audience much till a critic arose and condemned the whole spirit of the address, since it was made plain that "the ideal of the speaker was to create in his school a long, an endless, array of little Ebenezer Joneses." This godlike attitude of making others in their own image is to be avoided by all men, but there is nothing to hinder us in setting up an ideal that we can stand by, and aiming at getting others to approach it as nearly as we can make them consistently with maintaining the essential good qualities of the persons acted upon. The ideal to be aimed at in modifying the character is to bring out of the person concerned the best that is in him, to make of him the finest character of which he is capable. His temperament is one of the data of the problem. We cannot remove it, we cannot radically modify it. But we can so manipulate it and help him to regulate it as to bring out of it all the good of which it is capable.

In the case of the individual trying to modify his own temperament there is a certain danger of excessive self-consciousness. If we are continually tinkering at our temperament we are inclined to become morbid and unnatural. What is called *priggishness* represents the state of mind that is apt to arise where people take themselves in hand and set about making of themselves something different from what they are at present. But it must not be forgotten that self-consciousness has a good as well as a bad side. In ordinary life the bad side is so prominent that many people do not realize that there is a good side at all. Yet in philosophical discussions the coming to self-consciousness means the real coming of age of the thinking person. No doubt at a very early age the child comes to regard himself as different from his surroundings, but at some stage sooner or later he becomes distinctly conscious of himself as a separate person, and this stage really represents what may be called intellectual conversion. This form of self-consciousness marks a notable stage in self-development and is something to be proud of rather than to be ashamed of. On the other hand, there is a sort of morbid self-consciousness that interferes with the natural process of living. People suffering from this pathological experience have their attention so strongly directed to themselves that they get an altogether false perspective and are unable to conduct themselves with proper regard for their own importance or unimportance in relation to others. Consciousness out of its proper place is as dangerous as an explosive gas out of its proper receptacle.

Those who seek to manipulate their own temperament must approach their problem with the right kind of self-consciousness. It is quite possible to make the self the subject of investigation without the development of the morbid type of self-consciousness. It requires a little training no doubt to get at the most advantageous standpoint, but, once attained, that standpoint gives a base from which a fairly true estimate may be obtained of our own qualities and possibilities.

CHAPTER VIII

PAID-UP PSYCHIC CAPITAL

A Hint from Kant—Habits as Labour-Saving Devices—Habits and Awareness—Psychic Saving and Spending—The "Growing Point"—Creative Work and Knowledge—Can We Think Without Words?

It was the popular saying, "Habit is second nature," that wrung from the Duke of Wellington his famous, and solitary, contribution to psychology. On one occasion when the words were quoted to him he is reported to have exclaimed: "Habit second nature! Habit is ten times nature!" There spoke the soldier of the old school. In those days the great aim of the drill sergeant was to eliminate thought of all kinds. The more of a machine the soldier could be made, the better instrument he was in the hands of those who did his thinking for him and used him as a tool. Tennyson had the ethical stop out when he wrote of certain gallant soldiers on a memorable occasion, "theirs not to reason why," but all the same he there presents psychological truth so far as it is revealed to drill sergeants.

In the next chapter we shall find that there are those who believe that this regimenting of our psychic powers and the elimination of personality leads to the development of our highest possibilities. But to-day the military spirit is under a cloud, and the philosopher and the plain man are at one in the matter of favouring individual freedom and initiative. Even in military circles room is being found for qualities in the individual soldier which were formerly regarded as things to be got rid of. What we want to-day is the fullest development of the personality and the elimination of as many restraints as possible, whether these are imposed deliberately or unwittingly.

This attitude is naturally no new thing. Rousseau maintained that the only habit he would encourage his Émile to acquire was the habit of forming no habits. The statement is good enough as an epigram, but it is sadly lacking in applicability. The thing cannot be done. We must form habits whether we will or no. It would seem that we are, accordingly, doomed to failure in life, if we are to accept the verdict of another philosopher, this time a German. "To form habits is to fail" is the conviction of J. G. Fichte. Philosopher though he be, and idealist at that, he must have some justification for this startling statement, and this justification may be found in the fact that when habituation has done its perfect work personality has been suppressed, and man has been reduced to the level of the automaton. Even though the process has not gone to this bitter automatic end, it may have gone so far as to lower the habit former to a level that makes successful living impossible. The doctor who has only a score of prescriptions some one or other of which he fits into every case that comes along is certainly a failure. So is the clergyman who has at his disposal only a dozen sermons, some one or other of which must do duty under whatever text he may happen to select in the interests of variety. A man who works by rule of thumb is generally regarded as a failure by people who themselves have retained enough initiative to keep their self-respect in repair. Yet there are occupations and walks in life where habit is held in high regard. If the mechanized soldier has gone rather out of fashion the factory hand has come along to take his place. Employers are inclined to regard their workers as mere machines, mere instruments to do certain definite bits of work.

A HINT FROM KANT

Factory operatives are not much in the habit of reading Kant. Nor, for that matter, are their employers. But there is at least one section of the Kantian philosophy that might be read with great advantage by both. This is the part that deals with what is called the *Kingdom of Ends*. Kant wants us all to regard ourselves as members of a kingdom (had America been more fully developed at the time of his writing he would no doubt have called it a republic) in which each treats himself and others as ends and not as mere means. Emphasis must be laid on the word *mere,* for it is impossible for any one, however important, to be regarded at all times and under all circumstances as an end. All of us are both ends and means according to the circumstances of our experience. If we can regard ourselves as in the big broad aspect ends, it does not greatly matter if we must give up a certain part of our lives to function as means. We are not, under these conditions, *mere* means. The manager of a huge factory, speaking at a sociological conference, said, "I don't want my girls to think; I want them to do their work." He was a good psychologist, though not quite an admirable member of society. For his purpose as a mere manipulator of labour he was right in eliminating the personal aspect and confining himself to a consideration of the perfection of automatic efficiency. So far as mere psychology is concerned he is acting wisely, how far his policy can be justified on the wider plane of philosophy is quite a different affair.

HABITS AS LABOUR-SAVING DEVICES

Obviously, there must be some way of reconciling the two opposing attitudes toward habits. In each, of course, there is an element of truth. The trouble arises when we seek to apply either view with the full rigour of the game. But the two can be combined in a quite satisfactory way. In fact, they must be combined if we are to carry on our lives with a fair degree of success. Habit is really a labour-saving device on the part of nature. We are so constituted that any form of activity, whether physical or psychic, becomes easier by repetition. The popular saying, "It is the first step that costs," expresses rather happily the fundamental nature of habit. By its means we are enabled to conserve energy and avoid unnecessary effort. Habit may be regarded as a sort of psychological savings bank into which we pay in units of energy that we do not require at the moment but upon which we may call when the need arises.

This saving of energy is made possible by the physiological organization that facilitates the flow of energy through the nerves, by allowing tracks to be formed along which nervous energy can be transmitted with increasing ease as these tracks are persistently used. This time we are not dealing with a figure of speech but with real hard facts, or nearly so. It appears that the tracks along which nervous energy passes are not continuous in all cases. There are certain breaks in the connection, certain microscopic (in fact inframicroscopic) gaps over which the energy must leap in its passage toward its goal. These gaps are called *synapses,* and the first time a particular nervous current leaps a synapse a good deal of energy is lost. Next time there is less loss of energy. The more frequently the synapse is leaped the easier the process becomes, till finally progress along that particular path becomes practically uninterrupted. In fact, that happens in the body that happens in forests and other tracks in the scantily peopled parts of the globe. These tracks get beaten down into greater and greater firmness; the track becomes more clearly marked, and there is less chance of its being obliterated. The traveller can pass along it with greater ease and increasing confidence. Certain of our actions are performed so frequently that the synapses, across which the necessary nerve current must leap, offer so little resistance that progress along the nerve tracts becomes practically unimpeded, and the correlated actions are performed without effort and with no need for supervision from nerve centres.

The only disquieting element is the lack of definite evidence of the existence of these synapses. A well-known physiologist tells us regretfully: "We have never actually seen a synapse." But we are willing to take these synapses on trust; we are prepared to take the physiologist's word for it. Unfortunately, the physiologists do not speak so confidently about the existence of these synapses as we would like, and we would be perturbed in our minds about the matter did it not occur to us that it does not really matter to psychology whether there are synapses or not. If they exist, good and well; if they do not, let us treat them as the physicists treat the ions, electrons, and various other units that exist only on their reputation and in the imagination of the physicists.

From the psychologist's point of view the important thing is that by repetition a physical or psychic operation becomes easier. Further, individual physical or psychic activities can become organized into groups, so that quite complex processes may be carried on with the minimum amount of effort. With these complexes all that is required to set them in motion is the initiation of one of the elements. Once a start has been made the rest follows more or less automatically. When the quiet-living old professor goes upstairs to dress for a formal dinner he removes his coat and waistcoat. This action may initiate a chain of activities, the second of which is the winding up of his watch. If he yields to this stimulus and proceeds to wind up his watch he is probably lost. For this is the trigger that sets off the gun of habit, and the old gentleman may not realize that he has been shot till he wakens next morning unusually refreshed by his abnormally long sleep.

So far we seem to be getting deeper and deeper into the toils of the theory that to form habits is to fail. We must see now what is to be said on the other side of the question. Suppose our refreshed professor sets about dressing himself rather hurriedly in order to get off a special messenger with a letter of apology to his disappointed hostess of the evening before, it would seriously handicap him if he had to give conscious attention to each item of his dressing. If every individual stud demanded his personal attention his dressing would consume an unconscionable time. In point of fact, he dresses on the paid-up capital of his past experience, which in ordinary circumstances would be a notable advantage, though on this particular morning the old gentleman might feel that he was not quite grateful for the time gained, since it only gave him a fuller opportunity to repent in full detail the lamentable breakdown of the evening before.

HABITS AND AWARENESS

Obviously, we must have some means of regulating the tyrannical power of habit, else hostesses would cease to invite decent elderly professors to dinner. What Fichte epigrammatically, and therefore somewhat inexactly, expressed when he said that to form habits is to fail would be stated specifically by a modern psychologist in the terms, "to lose the power of accommodation is to fail." For we all have in some degree this power of accommodating habitual actions to changing circumstances. We may come through a long day quite creditably, working all the time on the habitual plane. Everything has happened just as it should; each stimulus has called forth the appropriate reaction, and we have come home with the gray matter of the brain untired because it has been called but little into activity. On other days, however, it is in constant ferment the whole time. The plain man often speaks of such days as those in which "everything goes wrong." All that it amounts to is that on those hateful days there has been a bigger demand than usual for modifying habitual actions to suit unusual circumstances.

The reference in the last paragraph to the gray matter of the brain recalls the physiological distinction that is sometimes made between the upper and the lower brain. We have seen that in a broad general way it may be maintained that the upper brain is the seat of thought and will, while the lower brain attends to such matters as do not require the intervention of the upper centres. For the sake of symmetry one is tempted to say that the upper brain is the seat of psychic activities and the lower brain the centre from which the psycho-physiological functions are directed. But trouble arises even here, for on occasion the upper brain can take a hand in regulating the activities of the lower. The truth is that the distinction between the habitual and the non-habitual cannot be based entirely on the local distribution of nerve energy, though it is often convenient to refer the habitual to the lower brain, and the non-habitual to the upper. If we limit our field of the habitual to overt physical activities the distinction between the functions of the upper and the lower brain may be maintained. But we have psychic habits as well as bodily, and we know far too little about the physiological accompaniments of psychic activity to talk with any confidence about the purely brain aspects of habit.

After all these considerations it will be clear that it is fully realized that when we talk of passing the direction of a given activity from the upper to the lower brain we are speaking in a purely figurative way, and if we retain this figurative language it is only as a matter of convenience in exposition. Another way of expressing the passage of the direction of an activity from the upper to the lower brain is to say that in striving to reach the habitual level we go through a process of eliminating consciousness. Current Physiologico-psychology may be fairly assumed to go the length of accepting the upper brain as the seat of consciousness, so we cannot go far wrong in saying that the transference of the direction of a specific activity from the upper to the lower brain is marked by an elimination of consciousness from the process of exercising that activity.

It is, of course, not to be assumed that in performing a habitual act or series of acts the person concerned is unconscious. The point is merely that he is not aware of all the details of his activity, and that he has no need to give attention to the guidance of those activities. His consciousness is free to attend to things other than those he is doing on the basis of habit. In deliberately setting about acquiring a habit or skill we have to give our conscious attention to each step in the process. Our progress may be tested not merely by the quality of the results produced, but by the gradually diminishing amount of consciousness that we must devote to the process. A time comes at length when the process can be carried on with practically no expenditure of consciousness at all, beyond the amount involved in starting it.

An ingenious elementary schoolmaster in the old days of teaching handwriting used to get his young teachers to manipulate the pupils' consciousness as a measure of their rate of progress. The young teachers were instructed to look out for an escape of consciousness on the part of the pupils, and the moment such an escape was observed, the youngsters were set at some new exercise. They began by making "strokes" with a slate pencil upon the school slates that children used at that time. They were interested in making the strokes of the right size, of the right slope, and fitting in exactly between a lower and an upper line. By and by, however, they acquired the power of doing this with moderate success without very much effort. They found time to look around them. This indicated an escape of consciousness; so the young teachers at once set the pupils to make pothooks. This kept their attention for a while, but by and by sufficient skill was acquired to enable the youngsters to make their hooks and yet take an interest in what was going on around them. Again an escape of consciousness, and again the introduction of a new element in the process of handwriting, for the schoolmaster had drilled into the minds of the young teachers that an escape of consciousness in the schoolroom is as dangerous as an escape of coal gas in an ordinary living room.

The escape of consciousness is a clear indication that the direction of the process in question has passed from the upper to the lower brain. The moment this transfer has been effected the new activity may be said to be added to the paid-up psychic capital of the person concerned. For example, while we are still at school and learning spelling we do our spelling with the upper brain in many cases. When we have acquired a mastery of spelling, we refer the whole matter to the lower brain. We no longer need the help of the upper brain. In fact, every time that we have to call in the upper brain we are in a parlous state. In many cases the puzzled speller appeals from the upper brain to the lower. He writes down rapidly on a scrap of paper the two possible ways of spelling the word and makes up his mind as quickly as possible without reasoning about the matter at all. He knows that if he begins to debate which is the correct form he is lost. It is not only here but in many other directions that the introduction of consciousness leads to trouble. The nervous disorder known as self-consciousness is not confined to drawing rooms. It may occur in the most unexpected places and under the most commonplace conditions. Going upstairs in the dark, under circumstances which demand silence and secrecy, often leads to stumbling and to miscalculation of when one has reached the top—and that even in the case of staircases with which we are blatantly familiar. Consciousness in the wrong place plays havoc with our paid-up psychic capital.

The length of time necessary to get rid of consciousness in the acquiring of a skill varies with the skill and the individual. Generally speaking, the elimination takes place more rapidly than is commonly supposed. Since the Great War there has been a certain exposure of the error of some of our comfortable opinions with regard to the amount of gray matter that had to be expended in acquiring certain skills. It was found, for example, that many of the skilled trades could be learned in a very much shorter time than those who practised these trades demanded from their apprentices.

In another direction very disconcerting revelations were made in connection with the huge citizen army raised by the United States. As a result of the tests used to enable the authorities to classify the recruits and allocate to them the work for which they were best suited, it was found—note that this is the report of American, not foreign, criticism—that the work of the American army was carried on with an intelligence on the level of that of a boy between twelve and fourteen years of age. Now even if we admit that this conclusion is based upon reliable data and accurate analysis, the Americans need not be so much worried about it as some of them appear to be. The vast bulk of the work of the world is carried on with the intelligence of a boy of twelve, for most of us adults depend to a very large extent upon the paid-up capital that has been invested in habit. No doubt occasions are continually arising where intelligence of a much higher order is required, and we must be prepared to meet such demands as they arise. All the same, the vast majority of our decisions and actions are reached and performed with the minimum amount of expenditure of gray matter, because of the inevitable system of the psychic paid-up capital.

PSYCHIC SAVING AND SPENDING

But our lives are not entirely made up of saving. Nature sees to it that we have to have a sort of psychic savings bank account whether we will or no. But she also recognizes that we must live, so we have a kind of vital budget. We are allowed to spend so much as well as to pay in a proper amount to our permanent account. The relation between the saving and spending account varies at different times in our lives. We have seen that in childhood and youth there is a more violent interaction between the two accounts than at later stages. The difference between childhood and maturity in this respect is that while the mature person has to live, the child has to live and *grow*. This marks an essential distinction, attention to which would help many people to avoid mistakes in dealing with the young. It is true that the adult continues to grow psychically for a long time, and sometimes also physically for a little while, after he has attained maturity. He also has to live and grow; but in his case the organism is in a state of stable equilibrium, whereas in the case of the child and adolescent there is a state of unstable equilibrium—a state that explains a great many of the troubles of childhood and youth.

To be sure there is the possibility of an overstable equilibrium, so stable that there is no motion at all. Old people sometimes get so set in their habits that all progress ceases; they are practically dead. Old fogyism is a familiar phrase, but it is only in its extreme form that all progress ceases. Professor James used to maintain that old fogyism set in at a very early age—somewhere round about twenty-five. At this age he maintained the young professional man began to acquire the outward stigmata of his life work, as lawyer, doctor, parson, schoolmaster. But all that this means is that the young man has acquired a body of skills organized in such a way as to enable him to act efficiently and with the minimum waste of effort in a particular professional environment. It is far from indicating that progress has stopped. The power of accommodation is at its height. To a paid-up capital of the best quality the young professional man adds a sensitiveness to change of conditions and a readiness of accommodation that put him in an ideal position to tackle new situations as they arise.

With many old men, however, the genuine old fogies, the power of accommodation has almost entirely disappeared. They like to do things in their old accustomed way. "The old is pleasant to the old." When it comes to eld, the stage "sans teeth, sans eyes, sans taste, sans everything," there is nothing more to be said, but before that is reached there is always the possibility of progress; accommodation is not entirely dead. We have the authority of an old Latin author for the view that no man thinks himself so old that he will not last another year, and a similar generalization may be made in the form that no one thinks himself so old as to be incapable of improvement. At New Year's time the making of good resolutions is by no means confined to the young. Nearly always these resolutions are connected with the breaking of old habits and the formation of new ones. These spasmodic seasonal good resolutions are merely more dramatic exemplifications of a process that is going on the whole time with people who have a respectably troublesome conscience. The guiding principle to be set up by those who would deliberately build up new skills and new idea-combinations is to cultivate desirable habits without damaging the power of accommodation.

So far as the acquiring of habits in the usual meaning of that term is concerned, Professor James lays stress on the principle of never allowing an exception to the habitual way of dealing with a particular situation. On the other hand, if we wish to keep our accommodation well oiled we must interpolate exceptions now and again to our ordinary habitual ways of acting. The contradiction here is not vital; we must consider individual habits on their merits. Some habits we know that we want to establish, and we are aware that under no circumstances should a breach in their continuity be permitted, since any such breach would inevitably result in damage to our ideals. The habit of early rising, for example, is one to which no exception should be allowed. We know that we want to form that habit and that there is no danger of our regretting its formation. Further, if for any reason—say failing health and doctor's orders—it becomes desirable to sleep longer in the mornings, we know quite well that the early-rising habit can be broken with comparative ease.

But, on the other hand, we may get into particular ways of doing certain things, ways that are not in themselves of special value, but are merely the result of the natural tendency toward habit forming. These habits may become a hindrance to ourselves and a nuisance to those we live with. Many domestic rituals serve a good purpose, and it is justifiable to maintain them. But others are mere conventions, household formulæ, and hinder the free operation of individual initiative. Habits of this kind should be kept "open" by the deliberate breaking of them as occasion arises.

THE "GROWING POINT"

The point in our experience at which new habits are formed may be compared to what botanists call the "growing point." In our botany lessons at school we learned that the plant increases in size by the multiplication of cells in various ways—fission, gemmation, and what not—but that these cells in each case reproduce only their own kind. Thus bast cells produce only more bast cells, cambium cells more cambium cells, wood cells more wood cells, and so on all over the plant—except at the growing point at the tip of the twig, where the cells multiply undifferentiated, thus producing cells that can develop into any special sort of cells that the plant needs most. So the growing point of the human organism on the psychological side may be said to be where new habits may be formed. To keep this point functioning is the same thing as keeping accommodation in good working order. To be sure, we are here as usual speaking metaphorically. There is no actual point in the human organism to correspond to the twig in the plant, but the figure is a useful one. It emphasizes the fact that it is at the growing point that we do our actual living, the living that really counts. All the habitual aspects of our experience represent mere existence.

Up till now we have regarded the paid-up psychic capital as a body of skills or ways of acting that involve the minimum amount of effort and have acquired a certain freedom from resisting friction of all kinds. In fact, our paid-up capital has been regarded as a body of potentialities banked up in readiness to be utilized whenever certain needs arise. But many people if called upon to explain the term *paid-up psychic capital* would be inclined to speak of acquired *knowledge,* and they would be disposed to buttress their view by referring to the popular saying:

"Knowledge is power." This view demands respectful treatment, since it embodies a considerable element of truth. But it need not lead to a division of our paid-up psychic capital into two groups—skills and knowledges. The two are fundamentally one. The knowledge that counts, the knowledge that is power, is not mere information. It is made up of facts that can be brought into relation with other facts that have a direct connection with our lives.

One of my lecturers while I was at college, for whom I have a profound respect, said on one occasion a very foolish thing: "If cramming means the acquiring of facts, then cram, cram." Everything depends on the kind of facts. There are more facts about the room in which I am writing than I could learn if I devoted my lifetime to the task. Even if I could accomplish the task my only result at the end would be the record of a misspent life. The number of grains of dust in the room is a fact, the name of the man who turned the wooden leg of my table is another, the exact number of centimetres of electric-light wiring is a third. There is no end to them, and almost all of them have no significance to me nor are very likely to have. And yet what we have called mental content may rightly claim a status in our psychic paid-up capital, though it need not be marked off as fundamentally distinct from the skills and habits we have been dealing with. In so far as our mental content is regarded as made up of ideas it may be regarded as outside the range of our paid-up capital, but the moment it is treated as a body of concepts it at once establishes its claim to inclusion in that capital. In storing up concepts we are really accumulating possibilities of acting in a specific way under given conditions. Our concepts are really potential skills.

As we are rightly afraid of the acquiring of habits as a possible cause of the deadening of our lives, so others have a certain fear of the acquiring of mental content. These timid souls are inclined to be afraid of the accumulation of mental content because of its deadening effect on mental activity. Mere acquisition of knowledge, they maintain, tends to make the mind content with its mere passive possession of this knowledge, and thus to prevent active use of the material acquired. There is no doubt that a certain acquisitive type of mind is satisfied with mere possession. Too often those who are called collectors fall under this condemnation. But if we keep in view the distinction between ideas and concepts and take proper measures to utilize the active aspect of the concept, there need be little fear of the paralyzing effect of accumulated knowledge.

It has to be admitted that there is a type of mind that is morbidly afraid of the acquiring of mere knowledge. This is especially noticeable among those engaged in what they like to call "creative work." They have the idea that such knowledge leads to a dulling of originality or invention. If we read a great deal of matter of the same kind as we want to write about ourselves, we are told, there is danger that we shall become stale and commonplace in our own writing. Certain timid souls are afraid to read the work of rivals in their own field lest they may be biased by what they find there. Now the only real trouble that might arise from reading their rivals' work is that they may discover there some fact or theory that the timid one believed to be his private property. But surely it is better to make this discovery of anticipation before publication than after. In my own case, if I think I have hit upon an entirely new point in my special subject—education—I always turn at once to Plato and Aristotle to see whether they have not been before me with this point. It is seldom that these two—the Great Anticipators, as I like to call them—have not in some form or other the point I considered brand new.

So far from being afraid of having their originality spoiled by reading widely in their subjects, those timid ones should rejoice in the greater possibilities for originality provided by the wider range of presented material. In the good old days before the war I had occasion to read a great many German books in my subject, and as the result of experience I found that I did not have to read the first two thirds or even three quarters of the books, for the reason that these industrious and conscientious writers had got into the habit of setting forth a synopsis of all that had been previously written on the subject before they added their own contribution. This they did less, I believe, for the sake of the reader than for their own sakes. They wanted to make it quite clear that they knew all this stuff before they came to their own addition to the general stock. Perhaps they took up too much space in covering the old ground, but the principle was in itself good. We must master what is technically known as "the field" before we dare presume to extend it.

The truth is that so far from being cramped in the development of our originality by the big collection of material already at our disposal, the bigger this collection the better the chance of being original. No doubt the first writers on any subject have the great advantage of a clear field. In this matter the Great Anticipators had a rather unfair advantage over our modern writers.

But at this point emerges a compensating circumstance. The crowded stage of to-day as compared with the clear one of the ancients may rank as an asset for us instead of a liability. The amount and complexity of the material at our disposal may well supply us with ideas and situations that would not have been otherwise available. We have a field in which the abundance and variety of the supplied material give unusual opportunities of introducing some unifying principle that may explain the whole. When we come to Chapter XIII we shall find plenty of examples of the sort of thing indicated.

What underlies the above paragraph may be well illustrated by the familiar fact that in the history of discovery and invention we seldom find a solitary worker into whose ken alone the new idea has swum. Nearly always the process of invention is a huge coöperative process in which there are many partners. No doubt every now and again an inventor comes along with a genuinely new idea that has had no recognizable forerunner. But this is very rare, and when it does occur things immediately develop in such a way that the usual course is established, for a crowd of ingenious people seize upon the new idea, work it up in every direction, and by coöperative effort lead to all manner of important modifications and developments. We have here on a cosmic scale an illustration of what is taking place all the while in the individual psyche. The mental content includes all manner of material to be worked up according to the energy and opportunity of the individual in question. So far from interfering with the freedom of action of the psyche concerned, this mass of material is a means toward freedom.

CREATIVE WORK AND KNOWLEDGE

As an example of creative work take the case of the novel. Even here knowledge, mere knowledge, as understood by the man in the street, plays as important a part as does imagination. Let any man of intelligence, but innocent of the technique of novel writing, sit down to write his first novel. He will be brought up, probably to his surprise, not from lack of imagination but from sheer lack of knowledge. He cannot clothe his characters aright—just because he is a man and so many of his characters are women. He cannot even speak definitely about the weather without hunting up old newspapers where he probably will not find what he wants. The merest reference to a railway journey sets him hunting up old time-tables. If he is wise he will settle down to describe scenes through which he has actually himself passed, deal with trains by which he has actually travelled, put his characters into clothes he (or his wife) has actually worn, or he has seen his friends wearing. He will even fall back upon his own love-making to give verisimilitude to the more impassioned form his needs demand in print. In short, he will depend on the material supplied by his own experience. Even with the really imaginative part, the romantic element, he will depend a good deal on his probably prosaic past.

We are familiar with the popular generalization that every one of us has in his own experience the material for one good novel. It is worth noting that in this proposition the word to be emphasized is *one*. In that word lies the point—perhaps we had better say *sting*—of the aphorism. The genius of the true novelist comes out in the process by which he can manipulate his one life experience in such a way as to interpret hundreds of other experiences outside his own. The paid-up capital of the novelist falls naturally into two parts, the one resulting from the actual experience of the man, particularly on the emotional side, the other resulting from what he has learned about the working of the inner and outer world. In this second connection the main reference would be to the cognitive side.

In making a professional use of his paid-up capital, the novelist, like the poet and the dramatist, must keep his eye on another paid-up capital, the one that belongs to the reader, or, in the case of the drama, the hearer or onlooker. It is too often overlooked that novel writing and poetizing, not forgetting dramatizing, are bipolar processes. There is the writer pole and there is the reader pole. Each is to be considered if success is to be attained. Unless the writer makes the proper appeal to the reader there is bound to be failure. The paid-up capital of the writer is of little avail unless it is balanced by an equivalent in the reader's mind. This does not imply that the reader's paid-up capital should be identical with the writer's, but merely that it is congruous with it. There must be a large section that is identical in the two capitals, particularly on the cognitive side. The reader must understand the writer's allusions, must follow his geographical and topographical details, must attach the same meaning to words of a delicate connotation. With regard to the affective element there need not be similarity, but again there must be congruity. If the writer is fond of a sentimental atmosphere the reader must be at home in such an atmosphere in order to secure that the proper contact shall be made.

We have been dealing with the paid-up psychic capital in terms of ideas or mental content. But it may be represented in a vaguer and more subtle way that is in itself of the utmost consequence, and yet works so inconspicuously that we are apt to overlook its importance. This indication of paid-up psychic capital is to be found in words. It is true that words are in themselves dangerous. They may misrepresent truth and may at a pinch take the place of thought itself, and thus lead us far astray. Mephistopheles, in Goethe's *Faust,* puts the matter neatly when he says:

. . . just where meaning fails, a word
Comes patly in to serve your turn.

The truth is that words are representative, not substantive. They stand for ideas or concepts but are not themselves units of thought. The old English philosopher, Thomas Hobbes, put this matter so clearly and pithily that his epigram can hardly be improved upon. He tells us that words are the counters of wise men but the money of fools. The sting of the saying lies in the usual place—the tail. There is nothing wrong in using words as counters, any more than there is anything wrong with carrying on business on credit. Just as commercial men conduct their operations to a large extent on a credit basis, so in our ordinary life we carry on our communications "on tick." Everything depends on what lies behind the business man's credit and the ordinary person's words. When we play a card game we usually deal with counters rather than with money, and the scheme is perfectly legitimate, so long as we have at our disposal the cash necessary to liquidate the counters at the end of the game. Bank notes, even the most unimpeachable of them, are, after all, nothing but counters. The fact that somewhere or other there is laid up an equivalent in gold or some other generally accepted medium does not remove the standing of the bank notes as counters. Every time that a man uses a word with a very complex meaning—transubstantiation, bimetallism, paidocentricism—he does not unroll before his mind its full implications any more than when he passes a ten-dollar bill he pictures to himself that there go a hundred dimes, two hundred nickels, or a thousand cents. The important point is that an honest thinker could, if called upon, give equivalents in ideas for every word he uses.

CAN WE THINK WITHOUT WORDS?

Before entering on a discussion of the range of words, we should look at the fundamental problem of the need of words at all. The question may be raised in all seriousness: Can we think without words? When so great an authority as Max Müller could write a big book on this matter, the problem cannot be dismissed as trifling. But in a book with our title it may be dismissed as academic. If Max Müller had been asked, with a pistol at his head, to answer categorically *Yes* or *No* to the question: Can we think without words? his answer would in all likelihood have been *Yes*. But when the pistol had been removed to a less dangerous position he probably would not have been able to resist the temptation to add—"but not much." The truth appears to be that while everybody agrees that for communication of thought words are absolutely necessary, for actual thought on the part of the individual their necessity may be perhaps disputed. But in this controversy there is a decided majority in favour of regarding words as essential to consecutive thought. Indeed, many writers would regard the appearance of language among humans as an example of that "emergence" of which we are hearing so much from a certain school of philosophers. This group of thinkers hold that every now and then in the evolution process certain entirely new phenomena appear without any definite cause that can be assigned. Something of quite a new kind suddenly appears and takes its place in the developing organism, and changes the whole position. If there be such "emergences" language certainly deserves to rank among them.

In my student days we realized quite clearly that nobody could give a rational account of the origin of language, and we used to enjoy sparring with one another in defense of certain theories that had characteristic nicknames—given not by us but by our learned professors—such as the bow-wow theory, the pooh-pooh theory, the big drum theory. But we realized that under these contradictory theories there was something rather important. Those of us who were studying the incipient science of education found practical applications for our theories in the controversy going on among educational theorists on the slogan, "Things, not words." Even at that early stage we recognized that the distinction between the two could not legitimately lead to a separation of them. We felt that both words and things were essential to any progress in educating either ourselves or others. Our notion was, in fact, that we attached words to ideas in much the same way as deep-sea fishermen and rum runners set a buoy to mark a place where they have sunk some nets or some casks. So that we may regard the vocabulary at the disposal of each of us as a sort of index of the mental paid-up capital. The words, however, are far from being a complete catalogue of our paid-up psychic capital, for words are practically limited in their application to the cognitive side. Many of our experiences cannot be expressed in words.

Even with this limitation we are far from having in words an accurate catalogue of our mental content. Sometimes attempts have been made to estimate the amount of this mental content by means of words. If we can get a fairly complete estimate of the number of words at the disposal of a particular person it may look as if we were in a position to make a reasonable guess at the number of ideas at his disposal. But we do not have a word for every idea that finds a place in our mental content. Even if we take the total vocabulary of a language we find gaps in the expression. Certain ideas have no representative in the dictionary. In English, for example, we have no word for a *one-armed man,* though in French we have *manchot.* But even in French there was, before the war, no word for a *one-legged man,* though they had a phrase *cul-de-jatte* for a man with no legs at all. The horrors of the World War set up a need for a word for a *one-legged man,* and the word *unijambiste* found its way into French popular speech, though not yet into the authorized French dictionary. But apart from such simple examples there are great realms of ideas that are available as ideas, though the need for a specific name for them has not arisen. For example, we have not in any language that I know a word for *the seventh son of a widow.* But we can quite well imagine a tribe or a nation in which certain rights attached to the seventh son of a widow, and in that nation a word would be rapidly coined to meet the need.

But even if we take languages as they stand we have a great difficulty in using them as measures of the number of ideas available to people who use the language in question. To the query: How many words are there in the English language? we get a startling range of answers. Beginning with the modest 14,286 of W. W. Skeat, we can rise through dictionaries of various degrees of pretension up to those that claim to contain close on half a million words.

Realizing that even this swollen vocabulary does not come within reach of the needs of the case, some people turn to the nerve cells to see if by calculating their number they may reach an approximation to the total number of units in the mental content. Now about these cells there appears to be a good deal of uncertainty. The number seems to be steadily increasing with the years. When I was a student they were usually called multipolar cells, and we were told that there were 600,000,000 of them. Some years later in a German work they were estimated at 1,200,000,000. Seven or eight years ago, in a work on education, an English doctor spoke airily about the two thousand million multipolar cells. Then in the Year of Our Lord 1927 Prof. R. J. S. McDowall had the following passage in a lecture on physiology reported in a volume which he has edited under the title of *Mind:*

> We do know that in the brain there are some ninety hundred million odd cells which may be connected together in an infinite number of ways, and which are quite capable of carrying out this function.

Even if we limit these cells to an idea each we have the very comfortable stock of 9,000,000,000 ideas for each person. But there is no reason why these cells should be limited to one idea apiece. Each idea may be regarded as a mere potentiality instilled in some way into that particular cell, and this potentiality may live quite comfortably with scores of other potentialities, any one of which may be actualized at any moment without disturbing its sleeping cell mates. In this way the potential ideas may take the wings of the morning and increase to the uttermost bounds of our imagination.

Obviously these astronomical numbers merely warn us that we are out of the region suitable for mathematical accuracy. It is quite sufficient for our purpose to say that the number of our potential ideas is incalculable, but that there is a limited body of them that actualize themselves so frequently that they acquire a relative stability, and that these attain the dignity of having a word attached to them. Accordingly, the number of words at the disposal of each one of us gives a rough general idea of our possessions in the way of ideas. In other words, the extent of our vocabulary may be used as an index of our idea-holdings. Some go farther and say that the extent of the vocabulary may be used as an index of intelligence; at any rate during the period of growth. This view has been practically applied as one of the tests of intelligence. Lewis M. Terman, in his *The Measurement of Intelligence,* has developed a scheme in which the vocabularies that mark the normal intelligence of children at various ages run as follows:

AGE	NUMBER OF WORDS IN VOCABULARY
8	3600
10	5400
12	7200
14	9000

Terman carries on his calculation to include grown-ups whom he arranges in two groups: (*a*) average adults, with a normal vocabulary of 11,700 words, and (*b*) superior adults with a normal vocabulary of 13,500. My own experiments among grown-ups of the educated classes show a wider vocabulary than Prof. Terman suggests. With senior and post-graduate students the vocabulary ran to about 20,000, the means of testing being the same as suggested by Terman. This discrepancy is quite a natural one. It is only to be expected that a group of advanced students should have a better grip of the dictionary than has the ordinary adult. Before Terman made his researches a Scottish schoolmaster had made an investigation on his own account and found that an ordinary educated person, mixing in an intelligent but not professional circle, required for satisfactorily meeting the demands made on him a total vocabulary of somewhere around 17,000 words. This schoolmaster took his investigation seriously, and as a matter of fact gave to the investigation all his spare time during five years.

Now 17,000 words is the vocabulary usually allocated to Shakespeare by philological critics, the total varying according to different critics from 15,000 to 17,000, the difference being caused by the inclusion or omission of words used in slightly different forms. Since Shakespeare is usually credited with an exceptionally rich vocabulary, it may seem incongruous to attribute the same number to the ordinary educated adult. But the apparent incongruity results from not taking account of the different kind of vocabulary considered in the two cases. For we all have three vocabularies—a speaking, a reading, and a writing vocabulary. In the case of an ordinary educated person the reading vocabulary is by far the largest of the three, as it includes the other two. But though a person's reading vocabulary necessarily includes his speaking and his writing vocabulary, it does not follow that the distinction is an idle one. In our reading we may come across any part of our reading vocabulary and our speaking vocabulary, but a great many words in our reading vocabulary we would never use in our speaking, still less in our writing. Shakespeare certainly knew a great many words that he never used in his writings.

The general tendency in estimating the range of vocabulary of a given type of person is to underestimate rather than overestimate the number of available words. It used to be said that the vocabulary of an illiterate agricultural labourer in any of the backward English counties did not rise beyond three or four hundred words. But now it is admitted that this range must be considerably extended. In an early work by a distinguished British professor it was maintained that a child of five did not know more than about two hundred words. Reading this in his drawing room with his child, who had just had her fifth birthday, playing around his feet, Dr. Parmalee, Secretary to the Protestant Education Committee of Quebec, picked up the little girl, and before he put her down he had elicited from her more than a thousand words.

So far we have been dealing with words in connection with the quantitative side of our paid-up psychic capital. They have also to be considered from the qualitative side. They have their interpretive value. They have the function of classifying and labelling the mental content, but in addition they have the function of bringing into contact the various mental contents concerned in communication.

Language is closely related to thought, so closely that some people go the length of correlating them as cause and effect. Referring to the Deity, Shelley exclaims: "He gave man speech, and speech created thought." This is perhaps going too far, but in any case it must be admitted that there is the most intimate connection between speech and thought, particularly in the matter of communicating thought from psyche to psyche. No doubt language as a bridge from psyche to psyche is not always to be relied upon; frequently the ideas that are being ferried across come to grief and do not reach their destination in what shopkeepers call perfect condition. This is sometimes the result of accidents of various kinds, but it must not be forgotten that there are circumstances in which there is deliberate obscuration in the process. A French cynic has said that the function of language is to conceal thought. In school we are sometimes taught that the perfect success of language is obtained when words enable the reader or hearer to have exactly the same thoughts as the writer or speaker. But a truer way of regarding the matter is to say that the purpose of language is to make another person think what we want him to think. If the words produce on his mind the effect we want them to produce, then our language has done its perfect work.

I should not be surprised to find some of my readers wondering whether all this talk about language is quite relevant. They may think that it would be more appropriate in a book on philology than in one on psychology. But surely nothing could be closer to the fundamental problem of psychology than the medium by which thought is stored and communicated. If psychologists believe that intelligence can be estimated at different ages by the extent of the vocabulary, surely the psychological standing of language may be held to be established. But the application is not confined to the young: the same principle is applied to adults. The saying is attributed to Goethe—but also to certain other distinguished men—that a man is as many men as he knows languages. Put in our familiar terms, a psyche adds to itself an additional psyche for every new language that it masters.

We may not go quite so far as this, for we have to point out that language may be regarded as a mere means of communicating or storing knowledge and does not in itself imply knowledge. We may agree to the epigrammatic saying that we *are* what we know; meaning that we and our knowledge are one. But when it comes to a new language it does not increase the sum total of our knowledge beyond the grammatical and other linguistic lore that a new language necessarily brings. Yet the fact that a man can say the same thing in seven different languages does not signify that he has greatly increased his paid-up psychic capital. The objection may be put in the way of saying that a man's bank balance is not increased by the fact that he has seven different check books. But a new language represents more than an additional check book. With a language goes a background. A man who knows English *and* French can deal with his mental content in a different way from the man who knows only one of these languages. The big stock of knowledge that we have figured under paid-up capital remains unchanged, no doubt, but it can be presented in detail against two quite different backgrounds. The configurationists would here supply a benevolent support and would point out that knowledge is not made up of static elements, but of potentialities, and that the man who can present the same thing against different backgrounds may produce richly differing effects. We are all familiar with the way in which colours seem to change according to the background against which they are presented, and every new language provides a fresh background. We must guard against the deadly error of letting the title of this chapter suggest cold storage. In the healthy psyche the paid-up capital is definitely dynamic, is indeed full of palpitating life.

CHAPTER IX

MAN THE MACHINE

A Letter from Mark Twain—Arnold Bennett on the Human Machine—An Objection to Mechanism—Iron Men and Robots —The Selenium Dog

One view of humanity is very attractive to the plain man who does not want to be troubled by all the irksome considerations thrust upon him when he undertakes to deal with the human being as a personality. There is something soothing in treating man as a machine. The trouble about this view of man is that it is true—so far as it goes. Whatever else he is, man is a machine as a foundation. It would ill become the writer of this book to find fault with the use of metaphor, so he must admit the right of the many authors who have adopted the machine attitude to use this particular figure to assist them in expounding their views. But these mechanistic writers will not rest content to keep to their metaphor as metaphor. They will not remain within the bounds of their figure but will insist on treating their expositions as statements of facts, and they make to their machine man all the applications that can be legitimately made only to man the person.

Take, for example, the French materialist La Mettrie, who flourished in the palmy days of materialism in the Eighteenth Century. He produced a book with the definite title *L'Homme Machine,* in which he speaks of a man as in the literal sense a machine. He seems to think that in using this term he is marking an advance on his rather coarse little work that had preceded it under the title of *L'Homme Plante.* In reality, of course, he is taking a retrograde step when he passes from the plant, which is after all an organism, to the machine, which is made up of dead matter. Froebel, following Plato, Comenius, and others, had scored a success in comparing man to a plant, and had worked up a whole educational scheme on his metaphor. A brilliant American horticulturist has worked up the parallel in a more general connection in a tiny book, the expansion of a magazine article, entitled *The Human Plant*. With his figure no objection need be taken. It deals with man in the category to which he belongs, the category of the organism, and Luther Burbank makes a capital use of his figure.

But La Mettrie starts away with his metaphor and immediately puts himself out of court by claiming literally for his machine what no machine is entitled to. He begins barefacedly by claiming for his machine qualities that at once bar it out of the machine class.

"The human body is a machine that winds up its own springs; a living image of perpetual motion."

As he remarks a little bit further on, "Everything depends on how the machine is wound up." He is right; and by calling attention to this fact he throws himself effectually out of court. It is of the essence of a machine that it cannot wind itself up; therein lies its essential quality, its machineness or its *machinitas* as the old Schoolmen would have said. It gives away its machinehood when it claims to wind up its own springs. With some other writers it might be suspected that there was a saving grace in the word *body*. It might be suggested that in writing "The human body is a machine" he laid stress on the body and left the psyche to look after itself. But with a writer with the record of La Mettrie there is little chance that he had such thought at the back of his mind. He boldly reduces man to machinehood and at the same time supplies him with the means of doing what no machine can do of its own initiative.

In this he is not alone in the list of those who reduce man to a machine. As a mere body man is no doubt a machine. Schoolboys in Scotland seventy or eighty years ago acquired a great deal of valuable information from a school reading book called *MacCulloch's Course*. The editor of that work had a strong liking for figurative writing and had a way of mystifying his young readers by describing, in apparently literal but really metaphorical language, some of the ordinary facts of life. For example, he roused the wonder of his readers by describing a land where the people kept tigers in their houses, only to disillusion the youngsters at the end by explaining that after all the cat is a kind of tiger. In this *Course* the human frame is described as a machine and the processes of eating and drinking described as stoking and watering the engine. But the editor has the grace to stop short of including a parallel to the psyche.

The ordinary serious writers for us grown-ups are not content to turn us into machines, literal machines. They will not give us the benefit of the loss of caste involved. If a man turns me into a machine he may be right, and I may be unable to prove him in the wrong. But in that case he ought at any rate to have the grace to let me alone and permit me at least to enjoy the irresponsibility of my machinehood. But as a rule the machine makers do not rise to this pitch of fair play. No sooner have they reduced me to the level of a machine than they start preaching at me. *Preaching to a machine!*

A LETTER FROM MARK TWAIN

Take, for example, Mark Twain, for whom I have always had the profoundest respect. Like many other brilliant humorists he had an intense desire to be taken seriously on serious matters. Away back in 1897, when my book on *Herbartian Psychology* appeared, he wrote to me on the subject in a way that greatly impressed me. Leaving out the purely personal elements in his letter—which he says was the longest he had written in years—the following is the part of general interest:

> A curious thing is the mind certainly. It originates nothing, creates nothing, gathers all its materials from the outside, and weaves them into combinations automatically, and without anybody's help—and doesn't even invent the combinations itself, but draws the scheme from outside suggestion. . . .
>
> It does seem a little pathetic to reflect that man's proudest possession —his mind—is a mere machine; an automatic machine; a machine that is so wholly independent of him that it will not take even a suggestion

from him, let alone a command, unless it suits its humour; that both command and suggestion when offered originated not on the premises, but must in all cases come from the outside; that we can't make it stick to a subject (a sermon, for instance) if an outside suggestion of sharper interest moves it to desert; that our pride in it must limit itself to ownership, ownership of a machine—a machine of which we are not a part, and over whose performances we have nothing that even resembles control or authority. It is very offensive. Any tramp that comes along may succeed in setting it in motion, but *you* can't. If you say to it: "Examine this solar system, or this Darwinian Theory, or this potato," you can only say it or think it when the inspiration has come to you from outside. And to think that Shakespeare and Watt, and we others, can't even combine our idea catches on plans original with ourselves, but that even the combination scheme must come from the outside—gathered from reading and experience.

Meantime *which is I and which is my mind?* Are we two or are we one? However it is not important, for if we say, "I will think," neither I *nor* the mind originated the suggestion—it came from outside.

Mark not only wrote this bit of very practical psychology: he told me that he was writing a book on psychology but had not the heart to publish it. Naturally, I wrote urging him to give to the world his views on this most interesting subject. But it was long before he brought himself to the sticking place. When he did publish his thoughts on this subject under the title of *What Is Man?* he told his readers in the preface that he had written it long ago, and had read it over every year for the past twenty-five years, and on each reading had found it sound.

The book takes the form of a dialogue between a young man and an old one—the subject being the nature of man, that nature being definitely set forth by Mark as a machine. There is no uncertainty in his statement of his position.

"Man the machine . . . is moved, directed, COMMANDED, by exterior influences—*solely*. He originates nothing, not even a thought."

It is quite clear that in all the years that elapsed between the writing of the book and its publication there was no change in the author's position. In the letter I have quoted he takes up precisely the same stand as in his little book.

Looking more closely at the book itself, we find that Mark does not spare his readers. His argument between the old and the young man is capital, but Mark is not consistent in the position he takes up. After he has reduced us to machines he at once sets about preaching to us. That at least he ought to have spared us. But not only does he preach by his general tone throughout, but he sets forth in good pulpit fashion a summarized statement of his doctrine, expressed in the form of what he calls an "Admonition." It is clear that he likes this admonition, for does he not print it twice in the course of the dialogue? Here is how it runs:

ADMONITION

> DILIGENTLY TRAIN YOUR IDEAS UPWARD AND STILL UPWARD TOWARD A SUMMIT where you will find your chiefest pleasure in conduct which, while contenting you, will be sure to confer benefits upon your neighbour, and the community.

An excellent admonition; nobody could find the least fault with it had it come from a pulpit or an ordinary "improving" book. But what has it to do here? What justification has Mark to start preaching to us after having turned us into machines? We all admire him too much to find fault with a little innocent preaching, but we feel that this is hitting below the belt. His argument tends to give us a comfortable feeling of irresponsibility. Being machines, and everything being determined from *outside*—note how fond Mark is of this word in the present argument—we were just feeling good when he stamps in with this disturbing admonition that we cannot but claim does not apply to us. Our withers *are* wrung, and we turn reproachfully away, and in our review of the case have our attention attracted to a certain inconsistency in Mark's argument. It does not really matter, for the damage has been done. Our confidence in our mechanical irresponsibility is already gone, so it does not greatly concern us to point out that it is impossible to apply Mark's admonition, if we accept his general theory as laid down in his book; for he hedges us in with so many restrictions that we are unable to apply his admonition. According to his teaching we cannot do anything of our own initiative. He tells us bluntly that:

> A man's brain is so constructed that it can originate nothing whatever. It can only use material obtained outside. It is merely a machine and it works automatically, not by will power. It has no command over itself, its owner has no command over it.

This seems conclusive enough to dispel all hope of being able to attend to Mark's admonition. And as if to take away the last possible shadow of doubt, he removes all hope by putting even training itself out of bounds.

> All training is one form or another of outside influence, and association is the largest part of it. A man is never anything but what his outside influences have made him.

At this point the schoolmaster pulls up his collar and throws out his chest, and even the clergyman may modestly reconsider that inferiority complex of his that results from the evil that he sees around him in spite of his persistent preaching. But even the plain man who has no platform from which he can deliberately seek to influence the thinking and the conduct of others may find his self-respect returning as he realizes the compensatory process that Mark sets up in our social surroundings. It may be that we are unable to influence our own thinking, but we are at least credited with being a part of that outside world that exercises such a potent influence on our own thoughts and deeds. Our pride must solace itself in the fact that we form a part of the "outside influences" that Mark Twain raises to such eminence.

When Mark contemplates this man-machine of his he realizes that he must endow it with some sort of force, if he is to get it started to work at all, and to keep it going once he has it started. So he supplies us with a universal motive—not a very noble one, but apparently of sufficient power to keep the machine moving. This is the need to justify ourselves to ourselves. Machines as we are, we appear to take ourselves to task and demand that we shall be able to satisfy ourselves that whatever we do or think deserves our own approval, no matter what other people may think about it. As Mark emphatically puts it:

> From his cradle to his grave a man never does a single thing which has any FIRST AND FOREMOST OBJECT BUT ONE—to secure peace of mind, spiritual comfort, for HIMSELF.

Here we have the matter in a nutshell: Spiritual comfort. Spiritual comfort to a machine!

The truth is that we are so emphatically not machines that our psyche is in open revolt against the mechanical degradation. It thrusts itself into every such mechanical presentation, throws the presenter off his balance, and sets him to stultify his own theories by preaching to the very man he proposes to reduce below the proper level of humanity. Mark Twain boldly walks into this psychological trap and so presents matters that we need not trouble ourselves by arguing against a position that resolves itself into such a contradiction in terms. Had it not been for the help we get from Mark himself, it might have been difficult to meet the common-sense arguments he brings forward in the more rational parts of his treatment. He has much to say that is interesting and valuable, and had he stopped short on the negative side he might have been a troublesome opponent. But by starting his preaching he raises the mechanized man to a level to which we are glad to see him raised. Mark has done our work for us.

ARNOLD BENNETT ON THE HUMAN MACHINE

Another treatment of the same subject is supplied by one of the most brilliant of English novelists. Arnold Bennett, however, is not a mere novelist. He has done a great deal of critical and constructive writing outside the range of fiction, and in his general and critical work he has had a marked influence on the life of his time, especially on the young. In particular he has published a series of little books at the popular price of twenty-five cents, and written at the address of young people, that have had an admirable influence on their readers. One of his titles is *How to Live on Twenty-four Hours a Day.* It is easy to imagine what magnificent moral swashbuckler work Bennett makes under this intriguing title. But here preaching is in order, and we wish him all speed in his hortatory work. But when we turn to his book in the same series called *The Human Machine* we are less sure. It cannot be denied that the preaching is excellent, and we might go the length of saying that it is very effective, even if it labours under the charge of obtaining moral results under false pretenses. Bennett has no more right than Mark Twain to reduce us to machines and then preach at us.

But in this little book, *The Human Machine,* there is an extenuating circumstance. Bennett has the grace to be inconsistent and, at the expense of a salutary contradiction, to put himself right with the critics. He regards man as a machine right enough, and would have no more justification in preaching to him than has Mark Twain, were it not that he smuggles in a new element that has no business in a machine. He makes a great deal of play with the brain and points out that we are apt to make it the scapegoat on which to pile many of our misdemeanours. But he is unwilling to let us have the benefit of this convenient receptacle for our backslidings, and tells us bluntly: "Your brain is not yourself, and not the highest seat of authority." Lest we should try in any way to slip behind the brain and make it responsible for our misdeeds, he impresses our responsibility upon us by proclaiming: "The brain is a servant, exterior to the central force of the ego." There it is quietly slipped in, with a significant lack of ostentation. This little word *ego* is starkly out of place here. What has a machine to do with an ego? And yet the sensible reader will welcome the tiny word; it indicates a complete surrender of the mechanical standpoint. At the expense of consistency, Mr. Bennett has won for himself his right to preach, and amply does he avail himself of it.

Even so sane and scientific a writer as T. H. Huxley, after taking away our ego, cannot bring himself to give us the benefit of our bereavement, but persists in giving us copious doses of the most excellent advice. His famous figure of the game of chess between us and Nature is a very pretty bit of writing, but its moral must leave us cold unless we can rise out of the machine level to which the scientist has reduced us. Waiving the point that a chess-playing machine has not yet been perfected, there remains the still more hopeless problem of finding a chess-playing machine that could draw a moral from whatever mistakes it made in playing the game. In his *Essays* we find the following passage:

> Nature's discipline is not even a word and a blow, and the blow first: but the blow without the word. It is left for you to find out why your ears are boxed. The object of what we commonly call education is to make good these defects in Nature's methods: to prepare the child to receive Nature's education, neither incapably, nor ignorantly, nor with wilful disobedience; and to understand the preliminary symptoms of her pleasure, without waiting for the box on the ear.

But how is the poor machine to find means of protecting its ear, even if the mechanistic writers were able to supply it with ears?

AN OBJECTION TO MECHANISM

The truth is that whether we will or no we must regard man as something more than a machine. Physiologically, no doubt, he is a sort of machine, but even on this basis he is more than a machine in the technical sense of that term. He is an organism, and the moment we have said this we have demanded for him a quality that is not present in what is ordinarily called a machine. Machine and organism alike have certain parts so arranged in relation to one another as to work toward a certain end. But in the machine this end is determined from without; in the organism it is determined from within. The organism works along lines determined by its own nature. The impelling force comes from within, and the goal toward which the organism works is also determined from within. In the machine the force must be supplied from without, and the end toward which it works has been determined from without before the construction of the machine has begun. What Aristotle says about the soul may be directly applied to the vital force that underlies and is an integral part of the organism. This force is, you will remember, "all in the whole and all in every part." We can remove any defective part of a machine, and replace it by a better one, and the machine goes placidly on its way, and after a little time for the new part to get into its swing along with the others, the whole goes on just as well as before the replacement. This illustration has suffered a little since the amazing success of replacement-surgery during the World War. But even yet there is a fundamental difference between the replacing of an imperfect wheel in a machine and the replacing of a leg—however excellent a substitute the artificial limb may be.

It will be plain to the reader that we are here dealing with what may be called a subordinate branch of "The Great Mystery" that we treated in Chapter IV. There is something in the organism that is absent in the machine. For the sake of simplicity we may call this something *life*. But the term does not help us very much. The inevitable question rises: What is life? and the resulting hubbub of discussion does not result in any marked increase in the understanding of our problem. All the same there has been taken a step in the right direction if we can come to an agreement on the fundamental fact that a machine is radically different from an organism and that man is an organism.

The mechanists of to-day are not so fond of the term machine as were their predecessors, though they are loyal to the idea underlying the term. Very attractive is the notion of a mechanical substitute for the human being that could do all that humans can do and yet have none of those troublesome idiosyncrasies that mark ordinary humanity. The employer who talks callously about his "hands" would welcome any invention that would enable him to replace his grumbling work people with machines that would do his work and hold their peace.

IRON MEN AND ROBOTS

A low form of this crude desire is illustrated in the more sensational and less intelligent plays represented in the cinema. Many of us have seen picture advertisements of a series of films in which "The Iron Man" plays a prominent part. In these dramas, I am told, a syndicate of villains have provided themselves with a mechanical man whose internal structure is so ingenious that he can be made to do a great many things that we used to think only a living human body can do. The advantages are obvious. This iron man can be wound up and set to do certain actions to the advantage of his owners, without running the risk these owners would incur if they themselves ventured on those actions. The reader has in all probability hardly the patience to read of such absurdities, though these films, I believe, have had a great success. Such pictures lay no claim to verisimilitude, or probability, or indeed to possibility. Even the occupants of the cheapest seats make no pretense of believing that they are watching a reproduction of reality.

The Iron Man represents the length to which the Anglo-Saxon temperament will go in the way of mechanizing humanity. But on the continent of Europe we find that the mechanical takes to itself the wings of the morning and soars into regions of stark unintelligibility to us English-speaking folk. The drama in Italy and in Russia finds room for a symbolic treatment that rather stuns us. When we look at the pictures that stare at us from the pages of the illustrated magazines that deal with the new continental drama we feel that we have reached a point at last where we are entitled to quote in real earnest the rhapsody of our English parodist Quiller-Couch in his early production *Bay Leaves:*

Do I wake, do I dream,
Am I hoaxed by a Scout:
Are things what they seem,
Or is visions about?

Perfectly incomprehensible figures appear to flit over the stage with no resemblance to humanity or indeed to anything else, though some of them are dressed up in what might be called unmistakable parts of a locomotive, were it not that the unsophisticated onlooker is apt to take them for animated chimney stacks. A disgruntled critic has called these actors "perverted digestive tubes." Into all this farrago a sort of meaning is read by the initiated. We are told that the machine drama is used as "an educator in the meaning of violent change of feeling produced by machinelike oppression." In Russia this form of the drama is said to give expression to the new spirit of economics in that country. This takes, we are told, two forms, one based on bio-mechanics, the other on Taylorism. In both we have set forth, it appears, the changed status of the machine. Formerly it typified a brutal oppressor grinding the proletariat in the interests of the capitalists; now it represents a noble instrument in the hands of the workers. Curiously enough, the motto of the new machine is the same as that of the Prince of Wales, which, you may remember, runs *"Ich dien,"* which may be Anglicized, *I serve*. The machine's old motto, according to the Russians, was *I enslave*.

Underlying all this one finds a certain basis of meaning of a symbolical kind, but how far that penetrates into the audiences who come to watch the antics of actors dressed up to represent all kinds of machinery it is difficult to say, the difficulty being made none the less by the music supplied by automobile honks, typewriter clatter, and miscellaneous noise produced by metals clashed against one another. Mr. Huntly Carter in his *The New Theatre and Cinema of Soviet Russia,* tells us that the machine

> . . . to the proletariat is the greatest instrument of future advance and happiness. Accordingly, they attribute to the machine all their social and moral attributes . . . their own vitality, strength, courage, cleanness, steel nerve, persistency, precision, rhythm, style, endurance . . . is it any wonder that the Workers are basing thought and action on the morality and truth of the machine?

In Italy the movement appears to have taken an æsthetic turn, for the artists seem to have come to the conclusion that the beauty of the machine has not been hitherto appreciated. One can enjoy the mechanical beauty and the charm of rhythm produced in the Toy Soldiers' ballet. Reasonable colour adds its effect, and the whole is attractive; but it is difficult for Americans or Britishers to look at a crowd of conglomerated chimney pots stiffly capering around as a locomotive ballet. Yet Marinetti, the Italian futurist, with the aid of the painter Deperro, appears to gloat in this sort of thing. As an English critic happily puts it, "Marinetti's idea seems to be that man is a cross between a marionette and a meccano set."

The prevailing idea among the machine-dramatists is that the old period has passed during which the machine kept swallowing man, and the new era has dawned when man has mastered the machine. According to these new dramatists the machine really represents man at his best, and the highest human training is that which brings man nearest to the machine state. As Huntly Carter remarks in another book, *The New Spirit in the European Theatre:* "The futurist use of the drama is to educate people in the exercise of the will to be machines." This setting up of the machine as the goal of our development has inspired a French dancing master, a certain M. Losharloshi, to make the machine the model for his teaching. He is said to make his pupils take the machine for their model in learning to walk. The trouble with this aspect of the subject is that some of these new mechanicians are calling attention to the fact that we sober English-speaking folk are not without sin in this matter, as witness our fox trot, two-step, cakewalk, and other mechanical dances. But our withers are not unduly wrung. There is little fear that we shall go wrong in this direction. Our view of the machine is rather the bourgeois one: we want to use it to serve our ends. With us the machine must retain its motto of *"Ich dien."* There is little fear that it will usurp the artistic rôle among us.

On a somewhat higher level stands a Bohemian dramatist, Karel Capek. He may be quite fairly classed as belonging to the machine-drama school. Yet he neither falls back upon the mere metallic machine, nor upon any system of training that might alter the very nature of man. He may be said to usurp the place of God and to make man in his own image. In his drama, *R. U. R.,* which being amplified runs as *Rossum's Universal Robots,* a distinguished physiologist named Rossum sets about experimenting with protoplasm, the substance with which life is usually associated. The result is that Rossum invents a new substance that has the same sort of qualities as protoplasm. The record he makes of this discovery as given in the play runs:

> Nature has found only one method of organizing living matter. There is, however, another method, more simple, flexible and rapid which has not yet occurred to Nature at all. This second process by which life can be developed was discovered by me to-day.

This ranks as the book of Genesis in Capek's bible of mechanism. The robots or machine men and women did not appear on the scene at once; as in the case of the authorized Genesis their appearance was delayed till the end of the drama of creation. Old Rossum was too much interested in the mere development of his synthesized protoplasm to bother with possible economic applications. So the dramatist skilfully introduces young Rossum, whom he wisely makes an engineer, thus giving a combination of biology and mechanics that naturally leads to the production of the sort of man-machine that the dramatist required for his purpose. One of the characters is made to explain in these words:

> Anyone who has looked into human anatomy will have seen at once that man is too complicated, and that a good engineer could make him more simply. So young Rossum began to overhaul anatomy and tried to see what could be left out or simplified.

It is clear that in making young Rossum successful in his mechanical adaptation of biological principles Capek is really begging the question of life. He quietly assumes that life can be produced and manipulated in this way. No doubt he is entitled to the ordinary license granted to poets and dramatists so long as they keep to the artistic plane. But when a writer of plays comes into the arena with conceptions that have a practical application to current thought he must be prepared to have his conceptions analyzed and criticized from the psychological point of view, though they may claim exemption from condemnation on the artistic side.

From our standpoint it is quite interesting to examine the situation created by a young engineer who knows enough anatomy to make ingenious simplifications in the normal human make-up, with the result of producing creatures with all the qualities essential to do effective work, and none of those qualities that tend to make workers troublesome. Obviously, they had to be intelligent, so that they could receive and carry out orders. Accordingly, they had to have brains, or their equivalent, so that they might exercise what is called *intellect*. Not being a psychologist, Capek does not go into this matter, and the spectator, or reader, of the play must fill in a great number of details. For the purposes of the play only one of the three realms of psychology—cognitive, affective, and conative—is essential. From the economic standpoint there was no need of the robots having any feeling, or feelings; no need for any will. To be sure, the robot had to make decisions in order to carry out the instructions of his maker; but that maker could easily arrange matters so that there should be no call upon the robot to "think for himself" or "make up his mind." When we realize what trouble we have when we try to demonstrate that humans possess what is called *free will,* there need not be much difficulty in granting that the robots could easily dispense with the conative element, or in plain English, "the will."

To tell the truth, it is an irritating business for a psychologist to read *R. U. R.* Difficulties crop up at every step, and it takes all their admiration for the skill of the dramatist to prevent critical psychologists from finding fault all along the line. At one point in particular even a friendly critic may find it impossible to hold his peace. It cannot be denied that the robots are very useful creatures; but one wonders about the robotesses. For of Capek it must be said as of God: "Male and female created He them." If he answered as a dramatist there is no doubt that honesty would compel Capek to explain that robotesses appeared in *R. U. R.*—"Because this is a drama." The playwright feels that the sex interest has to be introduced at any cost, and Capek probably thought that, though there is some sex interest among the human elements in the play, there is nothing like the exciting material that might be developed by the introduction into the robot impassiveness of such a disturbing influence as sex.

No doubt the economist may say that there is a certain justification of the sex distinction in the fact that the organization of the creatures might be claimed to have a definite relation to the sort of work the different robots are called upon to do. For example, we feel that it is more natural that the typist Sulla should be a robotess rather than a robot. But when all has been said we cannot but feel that since the natural purpose of sex has been served by other means there is something unnatural, and even wasteful, in introducing it into the robot scheme. The only justification is really the demand of the drama for the kind of interest that makes the strongest appeal.

As a matter of fact, there is a suggestion, toward the end of the play, that sex influence is on its way among the robots. Appropriately, the source of this influence in the play is a woman—a real live woman, Helena, who by exercising her wiles on Dr. Gall, the head of the physiological and experimental department of *R. U. R.*, gets him to make surreptitiously certain improvements in the make-up of the robots. Her motive is entirely good and philorobotic, but one cannot dabble with impunity in protoplasm or its equivalent. The lady wants Dr. Gall to supply the robots with souls. He replies that the best he can do is to "change a physiological correlate." But this apparently irrelevant modification set in operation a process that was evidently leading up to a humanizing of the robots, with such a change in their attitude toward their makers that a disturbance is initiated that leads to a crisis that nothing but the final curtain can deal with.

An interesting point confirming the above views about the explanation of the introduction of robotesses into the play is that an epilogue is added, the point of which is that a robot and a robotess fall in love, embrace each other, and wander out arm in arm with the permission ringing in their ears: "Go, Adam, go, Eve. The world is yours."

One can hardly help comparing the robots with Condillac's statue, which gradually developed the various qualities that make up human nature. But the statue was well behaved, and developed as its psychological master directed. The robots were less amenable to reason, and the breaking of bounds was perhaps inevitable from the very conception on which they were based. Condillac's creation was static; Capek's is emphatically dynamic.

During the palmy days of the robots, before the disturbing concession of Dr. Gall had set afoot emotional possibilities that led to all manner of social complications, Rossum's products provided an excellent field for the behaviourists. Among the robot population of Rossum's Island everything went in a way that would have warranted a behaviourist in certifying in the conventional language of business life that things went on "to my entire satisfaction." One could calculate absolutely on the reactions of the robots to all the stimuli to which they were susceptible. Their great advantage as instruments for man was to be found in this limitation of sensitiveness. In fact, when Dr. Gall began apologetically to explain his dangerous experiments he mentioned that they were mainly connected with "their—their irritability." This increased irritability played havoc with Dr. Gall and his friends, and also with the behaviourists. At first the robots played the behaviourist game perfectly. Their only psychic power at the beginning was intellect, pure intellect, and on pure intellect we can depend. We have seen that the Laws of Thought as Thought are immutable. We cannot break them; so the behaviourist can calculate upon their stability.

THE SELENIUM DOG

So firm is the confidence placed in these laws that, before the behaviourists were heard of, even such a solid man as John Locke could afford to make the assertion that no two honest men, having the same facts placed before them, can come to different conclusions. To the plain man who knows the very different effect produced by the same facts on two men of opposing political or religious groups, such a statement appears little short of ridiculous. Yet Locke was not a man to talk nonsense, so we are not surprised to find that he qualifies his statement by laying down the following conditions: Provided that (1) All the facts are known to each of the men, (2) Both are free from bias, (3) Both give their minds to the subject.

Keeping these three points in view, and applying the Laws of Thought as Thought, the skilful behaviourist would find no difficulty in predicting all the actions of the robots. But with ordinary men whose activities are complicated by the influence of the affective and the conative elements the behaviourist is greatly handicapped. No more, of course, than any other psychologist, but it seems more to him because he claims to have simplified the problem by reducing it to the mechanical level. No doubt there are all degrees of behaviourists, and indeed it may be honestly said that we are all behaviourists more or less. We all do depend on the behaviour of others when we are trying to understand those others. But when the behaviourists tell us that there is no other way of studying others than by observing their conduct they go too far and seek to reduce psychology to physics. A certain physicist in his study of the action of light has discovered that selenium is particularly sensitive to light, and working upon what he has discovered he has constructed a selenium dog that can be so manipulated by light that it will move about in a room following the directions of its creator. This selenium dog is the *reductio ad absurdum* of the behaviourist psychology in its extreme form. If we can pare off all the interfering influences till only selenium is left, then we can prophesy with accuracy how it will react. But till man can be reduced to this state of simplicity we had better treat him as an organism with all the complications and difficulties that this involves.

CHAPTER X

ATTENTION, INTEREST, AND BOREDOM

The Element of Purpose—Physical Accompaniments—Nisic and Anisic Attention—Interest—Boredom and Fatigue—The Merciless Bore—Borer and Boree—Some Relief Suggestions

At any given moment we may be assumed to have at our disposal a certain fixed amount of consciousness. The actual amount may depend on physiological conditions about which science does not know quite so much as it would like to; but that is not our concern. We have to deal with the manipulation of the amount of consciousness available at any given moment. We are all concerned with this problem, and ordinary speech supplies a term that indicates the process of distributing consciousness in our daily experience. It is true that this word—*attention*—is usually applied to one particular form of distribution, that in which the consciousness is concentrated on a small area. Nearly always it is associated with puckered brows and a generally strained attitude. But the term covers a much wider field. We can say that we attend to a whole landscape as well as to the minute specimen on a microscope slide.

But we must not make the mistake of thinking of attention in this static way, as if it remained fixed on either a wide or a narrow area. It must be regarded as a state of mind rather than as a fixation on a particular area. It is true that sometimes we have a fixation within a given area maintained for quite a while. The microscopist, for example, may have his attention fixed for half an hour at a time on a cell that is splitting on the microscope slide, just as the ship's outlook in the crow's nest may keep his attention fixed for a couple of hours on the distant horizon and the space between that and his ship. The two cases differ, inasmuch as the microscopist must keep his attention fixed at the one range all the time, whereas the outlook may (and ought to) allow his attention to include near as well as distant areas. The difference is correlated with the end in view in the two cases.

THE ELEMENT OF PURPOSE

Indeed, the element of purpose is the dominating factor in all cases of attention. We direct our consciousness in this way or in that, and in these directions we concentrate it or distribute it as our needs demand. We take now a near, now a distant, view of what concerns us. We are somewhat in the position of a person using a composite pair of binoculars that by the turn of a screw enables us to meet the needs of theatre, field, or marine. We are, in short, always "focussing" when we attend. This receives excellent illustration when we are listening to a lecture. We are apt to think that we are listening all the time during an hour's discourse, and a good listener is certainly justified in his claim, if we take the proper view. But if it is meant that we listen with the same degree of concentration to each item of the lecture, we are assuredly wrong. For there is a certain rhythm in listening, an alternation between the concentration beat and the diffusion beat. For a moment or two, sometimes even for a minute or two, we concentrate on the very words and ideas of the speaker, then we let the mind play around what we have heard, compare it with what we already know, and come to at least a tentative conclusion, and then return to the general line of the speaker's discourse. In an ordinary lecture in which we are comfortably interested this intermittent stock taking does not prevent the mind following with sufficient clearness the speaker's argument. But sometimes when one is uncomfortably interested—as, for example, when our material concerns are involved—some of those diffusion beats lead to a break in our following the general development of the lecturer's thesis, in which case the listener has failed to manipulate his attention satisfactorily.

Often the two listening beats are not properly evaluated. There is a very general impression that the concentration beat is the one that counts, while the diffusion beat represents a rest period. But each beat has its own special value. If we keep at high concentration pitch throughout a lecture we certainly gain a very complete mastery of the details, but the chances are that we have missed a good deal of the underlying principles. To be sure, some people listen so as to gather up all the details in such a way that after the lecture is over it is possible to disentangle from the details the underlying principles. But this is not listening in the best sense of the term, which implies that speaker and hearer are working together in a partnership. The listener's mind must keep playing around the various points as they are raised, comparing and contrasting facts and arguments as they are presented, and coming to tentative conclusions all the time.

The typical attitude is one of general expectancy. The mind is so attuned that it is prepared for a fair number of possible contingencies without being at all sure which one will be realized. A cat at a mouse hole supplies a suitable example of a typical case of attention. Perhaps better still is that of the fencer. He is prepared for any one of a certain limited number of possible reactions to any movement he himself may make. He must be ready for any one of them without being at all sure which one to expect. So in listening the hearer must be ready for a great many different lines that the speaker may follow and be in a position to deal with whichever line is adopted. In point of fact, however, really competent listeners must be able to anticipate a good deal of what the speaker says. Good listeners must be able to project themselves forward in the lecture and anticipate at least in a general way what is coming. They may not be able to determine which side on a particular point will be taken by the lecturer, but they must be able to anticipate that a decision must be made on a question that they see is coming, and this amount of anticipation puts them in a position to get out of a lecture the best that is in it.

Having reached a general idea of what attention is, we may turn with profit to its physiological accompaniments. There are three bodily manifestations that usually accompany attention, and that are so characteristic that they supply a specially useful illustration of the correlation of psychic and physiological phenomena.

PHYSICAL ACCOMPANIMENTS

The first physical accompaniment is an interference with breathing. When attention reaches a high pitch of intensity we apply to it the adjective "breathless." We are all familiar with the gasp of relief that marks the end of the attention demanded by brilliant displays of fireworks. The concert room and the theatre supply similar examples of the interfering effects intense attention has on breathing.

The second physiological accompaniment of intense attention is not so easily demonstrated. Indeed, we have to depend entirely on the physiologists for the facts of the case. They tell us that attention in this direction or in that is accompanied by the dilation or contraction of certain blood vessels determining an increased flow of blood in certain directions, according to the nature and application of the attention concerned. Obviously this does not give any practical help, since we cannot at will direct the flow of blood in this direction or in that. With regard to the breathing we are not in very much better case, for it would appear that the interruption of the breathing is an effect (or perhaps we had better call it a symptom), not a cause of attention. It would not be a very wise piece of technical teaching-strategy for a schoolmaster to say to his class, "Now, boys, we are coming to a very difficult problem; all hold your breath."

But when we reach the third physiological accompaniment of attention we are in better case. For this brings us into the muscular region, and we do have control over quite a number of our muscles. It is generally recognized that the muscles supply a means of expressing our state of mind. Generally speaking, this expression is correlated with other than the cognitive elements. But in the case of attention we have a definite connection between psychic process and muscular activity. In dealing with the expression of our feelings there are certain muscles connected with the expression of each emotion. We may not go the whole length with a French psychologist, Duchenne, who maintains that each emotion has attached to it one special muscle whose business it is to express that emotion. Most of us believe that certain facial movements represent certain definite emotions, but each of these movements is produced by the interaction of several muscles. Why we introduce this matter at all is because certain physiologico-psychologists have provided us with definite muscles that are responsible for the part-production of attention, and these muscles are therefore available for its expression to outsiders.

The upper eyelid is practically one muscle known as the *orbicularis superior*. When it is contracted the eye is left free from covering and is therefore capable of more efficient attention to things outside. Accordingly, it is assumed that this muscle is the one that is connected with external attention. On the other hand, when we want to attend to things within we are inclined to half close our eyes and thus remove distracting outside elements. Now the muscle that helps us to half close our eyes is the big broad muscle that covers the forehead and stretches to the back of the head—the one we wrinkle when in deep thought—commonly called the *occipito-frontalis.*

Accepting this for what it is worth, are we any farther forward toward a practical method of controlling attention? Will the schoolmaster that we laughed at for asking his boys to hold their breath in order to attend be in any better case if he asks them to contract their *occipito-frontales?* We shall look into the possibilities of this case when we consider in detail the relation between the emotions and their expression. In the meantime we have received so little encouragement on the physiological side that we had better get along with the purely psychological considerations. These bring us to the classification of the various forms in which attention presents itself.

NISIC AND ANISIC ATTENTION

Here we have a striking example of the confusion of terms against which a warning has already been given. There is not any important difference of opinion among psychologists about the various kinds of attention, but there is distinct confusion arising out of the meanings attached to the words used. The basis of classification is really the degree in which the will is concerned with the working of attention. The fundamental distinction suggested is that between voluntary (sometimes called *artificial*) and involuntary (sometimes called *natural*) attention. These terms are meant to separate that form of attention marked by the exercise of the will from the form that implies no such exercise. But the term *involuntary* is ambiguous and may be held to mean *against* the will, instead of merely *without* the will.

Accordingly, the kind of attention that was at first called involuntary came to be called either *non-voluntary* or *avoluntary*. This helped; but even the term *voluntary* itself is ambiguous. It may mean, as the older psychologists wanted it to, attention with the exercise of will; or it may be held to mean merely attention without any feeling of resistance—in short, cheerful or willing attention. *Spontaneous* attention has been used by many to indicate this pleasant, unstrained attention. But trouble arose. If an organ grinder started work under the university classroom windows, what kind of attention did the students give him, and what kind—if any—to the professor? Obviously many kinds of attention would be here involved, and the controversies set up by that organ grinder in the past were formidable. He was almost entitled to a place on the programme of the professors of psychology.

Another practical problem involved in the classification was the order of application of the different kinds. Should young people begin with voluntary attention and pass on to involuntary, avoluntary, or non-voluntary? The usual answer was that a beginning should be made with the non-voluntary form, and progress made to the voluntary. The cause of this opinion was a certain dignity attached in the human mind to voluntary activity. The will being regarded as perhaps the highest manifestation of the personality, it seemed only natural that it should be a terminus rather than a beginning in a process of human development. But as a matter of fact we have to begin with the sort that works best irrespective of the moral value attached to each. As the result of much waste of time involved in such discussions I made up my mind to cut the painter completely and adopt an entirely fresh pair of terms.

The radical distinction between the two kinds of attention, by whatever terms they are known, is that one of them is marked by effort and the other is not. The Latin word for effort or striving is *nisus,* and my plan has been to coin the two adjectives *nisic* and *anisic*. Nisic attention is attention with effort, anisic attention is attention without effort. It is clear that this is not a mere matter of words. We have first of all the great advantage of being freed from all the disturbing influence of a nomenclature that reeks of controversy. But above all, the distinction is clear cut; we know exactly where we are in dealing with the two terms. Take, for example, that fundamental problem: Shall we proceed from the voluntary to the avoluntary form or vice versa? We get free from the preliminary confusion by putting the problem in the form: from nisic to anisic or vice versa? The air is cleared. Are we to proceed from attention that involves effort to attention that does not; or are we to reverse the process? The problem no doubt remains to be decided, but we are quite clear as to what the problem is.

It is natural enough to argue that we ought to begin with the anisic kind and lead people from the easy to the difficult. But the problem rises: Will people ever face effort if they are always begun on the effortless plane? On the other hand, people need not be frightened off a particular line of work or thought because it demands a little effort to start it. Probably the matter may be compromised by admitting that with children, and with grown-ups of feeble character, anisic attention makes a good beginning, but for the normal developed person the natural order is from the nisic to the anisic form. We have only to consider which of the two forms is more prominent in ordinary life. A very little observation will show that the great mass of human activities are carried on by means of anisic attention. Life would become unbearable if we had to give nisic attention to the great body of material that makes up our experience.

Those who are jealous for the prestige of human personality, and are afraid of anything that seems to favour the automatism that some psychologists seem willing to accept as all that there is in human nature, may take comfort from the fact that nisic attention does not in any way fall in rank by being made the beginning of each unit of experience where attention is involved. It may well be that we can admit that the great bulk of human experience is carried on by anisic attention and yet hold nisic attention as of at least equal importance. The two have indeed different functions. Nisic attention *leads and directs,* anisic *carries on.* If we take up some subject that has no attraction for us nothing but nisic attention will enable us to make a beginning at all. During an hour's work at an uninteresting subject of study the following is the usual development: We resolve to attend; we attend for half a minute; we catch ourselves thinking of something else; we recall the mind by nisic attention; we attend for a minute and a half; our mind wanders; we pull it back by a voluntary effort; we attend for three minutes; our mind again wanders. This goes on at the most for fifteen or twenty minutes. Finally one of two things happens. We either settle down to our work and are surprised how time has passed when the end of the hour comes, or we wander off permanently and are unable to attain to anisic attention; unless we do attain to effortless attention our study is a failure. As a rule we attain a decision fairly early in the hour. If we expend a great deal of effort in maintaining attention and fail to set up the anisic form we have to give up the attempt: the only alternative being to fall asleep.

INTEREST

The question naturally arises: What is the force that causes the passage from the nisic to the anisic form of attention? A name, at any rate, lies comfortably waiting for us in the dictionary. But when we have looked up *interest* in the authoritative pages we do not at first feel much further on. *Interesse* we know to be the Latin equivalent for *being between* or *concerned with,* and we gather that whatever affects us, or that we are concerned with, interests us. Whatever has a bearing on us and our affairs has a direct interest for us. Some things interest us more vitally than others, but everything that interests us must make a contact with our affairs somewhere. Falling back on our figure of the dome and the correlation among the ideas, we may say that any idea that has once found a lodgment within the dome has a potential interest for us, and that the greater the number of combinations it has formed in the dome the stronger the potential interest and the greater the chance of that interest finding scope by bringing into consciousness the idea in question and keeping it there.

Nature has seen to it that certain paramount interests cannot be passed over. She cannot run the risk of allowing dangerous matters to pass by unnoticed, so directly by appeals to the senses and by the gradual teaching of experience she contrives to bring before our early notice a great many things of which we cannot be safely ignorant. The more essential they are to our safety the more rapidly and vigorously are these matters brought within the sphere of our attention. Education no doubt takes up the wondrous tale at a later stage and proceeds to cultivate interests of a less immediate but still vital consequence. Here nature aids and abets by making it easy to rouse interest. But as we move upward in school work to more and more abstract subjects, the difficulty of rousing interest increases, till a point is reached at which only indirect interest can be attained. It is true that, however attained, an interest is an efficient force, and sometimes indirect interests reach an exceedingly high standard of effective power, dominating the lives of individuals as vigorously as any of the direct interests, except those that are at the first remove immediately connected with life preservation.

A great deal of our social and economic life is strongly affected by the manipulation of interest. The word itself has become of late current in business circles in its verbal function. "Can I interest you in . . ." has become a common opening for an attempt to effect a sale of some kind or other. But it is in school work that interest has been most deliberately cultivated and most fiercely attacked. Teachers in fact fall into two great classes somewhat bitterly opposed to one another on this point. Each party has received a nickname. Formerly the only party, and still the strongest numerically, was made up of "the good old grinders" who believe that there is no need to make school work interesting. They tell us that the world for which the youngsters are being prepared does not go out of its way to make things interesting for people, and that pupils who have everything made interesting for them at school are but ill prepared for a world that is not worked on that principle. The average secondary teacher is apt to say: "Give them the good old grind, Latin, Greek, mathematics, and other exacting subjects that demand hard work and offer in themselves no attraction whatever." Classical teachers have been known to say that the only value of their subjects is their intense difficulty, and any attempt to make them attractive will result only in diminishing their value as training. Mr. Dooley, the American humorous character, says that "it does not matter very much what we tache the childer in school, so long as it is disagreeable enough." He says in his whimsical way exactly what the "good old grinders" seriously believe.

Those who favour the use of interest in the process of teaching are accused of making things too easy, making school work a case of "roses, roses all the way." It is not remarkable then that they have earned the nickname of "primrose-pathers." They are accused of making things not only easy but pleasant. To this they are not inclined to plead guilty, pointing out that to be interesting and to be pleasant are two different things. There can be few places in the world more unpleasant than the prisoner's dock, and yet few places can be more interesting to its occupant. If the teacher's object is merely to make things pleasant for the pupils he is nearly as much in the wrong as is the "good old grinder" who makes things unpleasant with malice aforethought. But the modern teacher with his insistence upon interest, so far from seeking to avoid the difficult and disagreeable, does all he can so to manipulate interest that it will lead his pupils to undertake all manner of hard and otherwise disagreeable work in order to attain some end in which they are induced to be interested.

Drudgery is not in itself desirable, though we must all be prepared to undertake drudgery when it comes our way as part of our legitimate work. Interest, so far from unfitting us for drudgery, is the best means of enabling us to face it in the right spirit, and by instilling into it the element of intelligence making it tolerable. Indeed in modern education we have a curious change in the attitude toward interest. The struggle between the "grinders" and the "pathers" has been concerned mainly with the use to be made of interest as a means toward an end. The one set say that we should not use it at all, as it is a bad means, the other that we should use it for all it is worth. Even with this limitation the balance of public opinion is in favour of the "pathers," for what seems the best argument of the "grinders" appears to break down. When they complain that the use of interest in school does not prepare the pupils for a world that is not interesting they are obviously working on wrong premises. The world may not be a pleasant place, but it is certainly an interesting one. The "grinders'" real objection is that the "pathers" make school so pleasant that when the pupils get out into the hard world they find things so severe that they are unable to meet the demands made on them. But fortunately, however interesting the "pathers" try to make school work, there will always remain such a surd of the strenuous that the pupils can never acquire the purely lotos-eating attitude that the "grinders" fear.

With the newer view of the place of interest in the educational process the struggle of the "grinders" and the "pathers" may well cease and determine. For interest is no longer treated as a mere means to an end, but as an end in itself; it is no longer regarded as an instrument to be used in attaining an educational result, but as that result itself. The Herbartian ideal of education is to produce a person equipped with many-sided interest, one who finds nothing in the world alien to him. He does not necessarily approve of all that he is interested in, but he is interested in all that comes his way. The distribution of interests among different matters is another problem, and from this point of view the ideal outcome of education has been described in words that have been claimed for more than one writer: "Knowing everything about something and something about everything." Augustus De Morgan (or whichever of the other claimants you favour) is right in his implied definition of the aim of education, and his finding is quite in keeping with Herbart's, for the claim to an almost universal though undetailed knowledge is really a claim to many-sided interest.

While we have made up our minds about the nature of attention and the force that underlies its application, we have left untouched one essential point—the centre of attention, the person who attends. In all that we have said we have assumed a subject to the verb *attend*. We may say the same thing about the verbs *imagine, remember, judge*. But there is a difference: these others have a specific reference, they indicate modes of being conscious in a particular way, while attention deals with the application and manipulation of consciousness in general. It is the turning of the whole force of consciousness in this way or in that, so that it may manifest itself in whatever form the circumstances of the case demand. There is here a practical element that is absent from the specific activities. Attention is a sort of undifferentiated activity, a force of direction rather than of specific reaction. This helps us to understand why in the opinion of some psychologists attention and will are identical. The underlying thought is that if attention operates, the whole psychic organism is called into activity and it acts as a unity. We do not have the attention directing the perception and the rest and at the same time calling upon a separate faculty to size up the results and then take appropriate action. The business of attention is to guide the various psychic activities in such a way as to ascertain the possibilities of each situation as it arises. But in order to do this it must be aware of what the needs of the psyche are. In other words, attention may be regarded merely as the expression of the activity of the psyche as a whole, that activity taking two directions, one exploratory and the other executive. In ordinary speech these have separate names, to wit, attention and will. We shall so far conform to popular usage as to give a separate treatment to will in the next chapter under the heading of "The Psychic Steering Gear." But it is well to note here that certain psychologists regard attention and will as merely different aspects of one mode of being conscious.

What we have already said about the use of interest in the school can be applied directly to ordinary life, the only difference being that outside school we have to make our own use of interest and not depend on having it directed by others for our own ultimate good. No doubt our interest is often manipulated by others for their own good, so we must give serious attention to interest in all its forms if we wish to run a safe course.

BOREDOM AND FATIGUE

All our activities are influenced by the working of our interests, higher and lower. The manipulation of our interests makes up an important part of our conduct of life, but, curiously enough, the lack of interest appears to subtend a bigger angle in our experience than does the actual effect of any one of the ordinary interests, if we except those on the functioning of which our lives depend. The explanation is to be found in the fact that the special interests get scattered among the many, and no one person can get up a very vigorous concern about the interests of another. But we are all concerned with the state that accompanies the absence of interest. Our special interests may be quite different from those of our neighbours, but the absence of interests leads to a state that is the same for all mankind. Everybody knows, and has suffered from, what is called boredom. The majority of us, on looking into the matter, are willing to admit that the most potent cause of boredom is the lack of interest in any matter that happens to be brought before us. This certainly accounts for one, and perhaps the most common, form of boredom, and may be classed as negative.

So strong is the general belief in the case of this form of boredom that we may almost venture to give it mathematical status, and say that the quantity of this kind of boredom varies inversely with the amount of interest present.

At this point it is well to clear away certain misunderstandings that are likely to lead us a little astray in our dealing with boredom. That these misunderstandings are not merely theoretical, and therefore negligible, is proved by the fact that they have led to bad practices in education at both the lowest and the highest grades. Fatigue and boredom, for instance, have been often confounded. Old-fashioned teachers when they found their pupils fatigued would set them running round the room as quickly as they could, or still better set them running round the playground, in order to "blow off the cobwebs." Sometimes this plan succeeded, sometimes not. Occasionally the teachers were puzzled to account for the erratic way in which the remedy worked. Usually they did not realize that in the cases in which it worked the original trouble was not fatigue at all but boredom. If the pupils were really fatigued the run around the room would only intensify the fatigue. It is true that when the run took place outside the classroom there was a slight improvement, because of the physical stimulation supplied by the fresh air. But if the class is merely bored the change of occupation produces an immediate reaction that is favourable.

Physiologists are inclined to believe that fatigue is one and indivisible, and that there is no such thing as mental fatigue as opposed to the fatigue produced by physical exertion. They have made gruesome experiments in which two rabbits played the chief rôles. One of the creatures was kept in the most comfortably easy circumstances for a considerable time, so that it came on the stage in a state of perfect composure and well-being, while the other came to the experiment tired out by a long period of treadmill work at a specially contrived wheel in a squirrel's cage. From the fatigued rabbit a few drops of tired blood were extracted and injected into his well-rested fellow performer. The result was the immediate appearance in the hitherto comfortable bunny of all the symptoms of physical fatigue. Following from this performance, the physiologists tell us that fatigue is the result of the appearance of certain toxic products in the blood, and that these products make their appearance whether energy is expended on the football field or in the mathematical classroom. Whether this is true to-day or not I am not sure; I have not forgotten that T. H. Huxley used to say that the average length of life of a physiological theory was somewhere round three years; but in any case this view of the nature of fatigue has revolutionized the old theory that at the university a man could spend all his mornings in severe mental work in his study, and all his afternoons in slogging work on the river or on the football field, and that the two fatigues thus engendered (morning and afternoon) would cancel each other out.

Keeping to our general principle of making practical applications wherever possible, we may ask here whether that person so sympathetically regarded by the American public—the Tired Business Man—is really tired. May it not be that the initials should be changed from the familiar T. B. M. to B. B. M., the Bored Business Man? The issue is important, for on it depends the spending of the summer afternoon in a hammock or on the golf links. In any case the T. B. M. in the process of becoming tired is not, for the time at any rate, bored. Probably the evidence of the two bunnies justifies the letter T in the T. B. M.

If we have to attend when we are in a state of boredom the question naturally arises whether we give nisic or anisic attention. To be sure, some may be inclined to raise a previous question, and ask whether it is possible to have attention of any kind when bored, a question that paves the way for the consideration of that kind of boredom that may be called positive. There are certain states in normal experience where there does not seem to be any attention at all involved. This may be illustrated by a reply reported to have been given by an old inmate of a veteran's Home when asked by a visitor what he and his fellow veterans did to pass the time as they sat on the comfortable benches in front of the institution: "Well, sometimes we sits an' talks; an' sometimes we sits an' smokes; an' sometimes we sits an' thinks; an' sometimes we jest sits." Can this final state be fairly regarded as boredom? It is an open question. It is quite possible to sit sunning oneself in the open without having an idea in one's mind, and yet being perfectly at ease. When Goldsmith writes of the

Loud laugh that spoke the vacant mind

he is describing a state that is not necessarily one of boredom: in fact, the suggestion is rather one of pleasant, care-free contentment. The state of the veterans when they just sat may, if you please, be regarded as the lowest stage in a graded scale of increasing interest. It is a negative rather than a positive state of mind. The prominence of the hammock and the rocker in American social life gives tacit support to the view that it is possible to be free from any active interest and yet not be bored. Tobacco is another argument in the same direction, since an epigrammatist has told us that its highest function is to make idleness tolerable.

On that veterans' bench there was no problem of interest at all, so long as we keep to their fourfold analysis of activity or the lack of it. The men were in a neutral state to which the adjective *vegetative* might be applied without offense, for it may be equally applied to the hammocker, the chair-swinger, and the smoker.

At the next higher stage a gentle positive interest is roused by some trifling matter, say a bee buzzing around in the garden. Still we have no boredom, but rather a placid satisfaction. If among our veterans two got up a discussion resulting in a bet about which calyx the bee will next visit we have a higher grade of interest, and this puts boredom farther off than ever. So the two questions press for an answer: "At what stage does the new kind of boredom supervene? What are the elements that superinduce positive boredom?"

The negative and the positive form may be distinguished in this particular case in this way: If the wager has been settled, and the bee has gone about other business, and nothing turns up to take its place as a source of interest, and the other old men are content to sit half asleep, the wager loser may as an after effect of the incident be a little less sleepy than the others and yet have nothing to take up his attention. He has some energy at his disposal and no outlet for it. The result is negative boredom. In the case of the veteran there is no great danger of cataclysmic results, but when we are dealing with young and vigorous people this is a danger zone; it is in fact that state in which "Satan finds some mischief still for idle hands to do." A boy of six, the restless child of a brilliant neighbour of ours, came into my wife's room on one occasion with the urgent petition, "Give me something to do! Quick, or I'll be up to mischief!" Excellent psychology in spite of the extreme youth of the psychologist. His position may be compared to that of a person trying to breathe in a vacuum. He cannot help making more or less violent efforts, however vain they may be.

When we come to the positive incentives to boredom we have a case parallel to that of a person compelled to inhale a noxious gas. The result follows from an actively irritating influence. The disturbing cause may be in itself irritating, in which case we have a reaction that is not quite comparable to boredom. A person reading a book with the contents of which he violently disagrees is not bored; he is angry. He has plenty of interest in what he is reading and thus escapes boredom. But suppose he has to read the book, much as he dislikes it, for some extrinsic reason—because he has to review it, or because he knows the author and must be able to show that he has read it—he may be intensely bored. But there is the underlying justification for reading the book. This carries him through, by creating a feeble but genuine extrinsic interest. Perhaps the best example of this positive boredom is a student reading for examination purposes a book in which he has no interest.

Take the common case in society of an external demand for nisic attention to something that has no attraction for us. Suppose, for instance, that the veteran who had won the wager, after the bee had gone and the trifling stake had been handed over, kept on talking about why the bee had entered that particular calyx, and how he, the winner, had calculated that it would go into this particular calyx. The loser has no longer any interest in the bee or its performance. The winner is full of vigour on the subject and keeps droning on. This is a typical case of social boredom, and few there be who have not to undergo the tortures of the helpless listener. There are, of course, various degrees of torture, and various extenuating circumtances, and a range of palliations and countervailing attractions; but this kind is always positive boredom.

The bored veteran's case is nearly at the bottom of the scale. Not only has he no interest in his comrade's speculations on the motives of the errant bee, but there is the sting of defeat gnawing into his unconsciousness and becoming intensified by the "rubbing in" of his triumphant friend. The lowest depth of all is reached, however, when in addition to lack of interest in the talker's words, and the natural gloom resulting from defeat, there is the desire of the listener to attend to something else in which he is keenly interested. In such a case common civility demands at least the appearance of attention to what the other person is saying, and an interference is thus set up that leads to a very restless and irritated state of mind which cannot, as a whole, be described as boredom, though boredom is the proximate cause of the whole distress.

Without doubt the most frequent field of boredom is in intercourse or lack of intercourse with our fellows, and we must probe into the innermost recesses of this aspect. But for the sake of systematic treatment we had better begin at the lowest rung and work our way upward through the various stages of boredom. The simplest form results from pure negation, lack of material. The prisoner in solitary confinement makes an excellent starting point. He is bored by sheer lack of material on which to exercise his powers. No doubt he makes use of whatever material a relenting Providence permits to come his way, as witness the pathetic accounts we read of the cultivation of a violet between the stones of the cell window, and the camaraderie established between man and mouse. To be sure, a vigorous imagination is a great antibore specific. But not all of us have enough of this quality to echo with conviction Lovelace's familiar lines,

Stone walls do not a prison make,
Nor iron bars a cage.

Most of us in his circumstances would settle down to a definite boredom that might by and by develop into melancholia. Fortunately, few of us need take serious personal account of this lowest rung of the ladder of boredom. Most people will be inclined to complain that we need all our reserves to deal with the boredom that comes with our ordinary daily life. Naturally, we turn with most sympathy to those whose life work consists in some mechanical repetitive process, to some worker in a Ford factory or other institution where the Taylorian "scientific management" has reduced human beings to cogs in an industrial machine. Here we have boredom at its worst: unmitigated boredom. No doubt the promoters of scientific management maintain that the ease of manipulation and the lack of responsible thought are extenuating circumstances that more than compensate for the stark boredom involved. But that this contention cannot be maintained is shown by the general detestation of the system by those who are brought under its control. The advantages of the system cannot be denied, but the workmen feel that even the increased emoluments that it enables their employers to pay do not make up for the "cog" attitude it forces upon the workers.

Yet workers under scientific management tell me that mechanical as is the work they have to do it demands their whole attention so that they cannot think of something else during working hours. If this be so their mental state while at work cannot be described as boredom. They may have no interest in their work, but if it fully occupies their attention there is no room for boredom. The question again rises: Which kind of attention is involved—nisic or anisic? The answer must be *Nisic*. For a certain amount of effort is implied. In anisic attention no effort at all is demanded, we are carried on by the interest in what we are doing, all our energy is drained off into what we are immediately concerned with, and there is no temptation to wander from the path we are following. In "cog" work our attention is necessary to the extent of securing prompt reaction to situations as they arise. There is always a feeling of responsibility, since we know that any failure to make our cog function at precisely the right moment will throw a whole organization out of order. There is sometimes, too, a sense of danger. Any lack of coördination may not only throw a whole machine out of gear but may produce results in the highest degree unpleasant to the erring cog himself. But in spite of all this, I cannot accept the statement that these cog-workers cannot think of something else while engaged on their mechanical work. Mr. Taylor's favourite example—pig-iron handling—supplies a case in point. What is to hinder a pig-iron handler from thinking of something else as he carries his bars of iron from one pile to another?

There is, in fact, a whole gamut of occupation, from the pig-iron handler up to the well-to-do widow invalid, that could be arranged in the order of the amount of attention left free while still carrying on efficiently the ordinary reactions essential to life activities. The problem of the amount of free attention accompanying the course of ordinary living may be made easier by a reference to the work of the two regions of the brain, the upper and the lower. Speaking in a general way, as we have already noted, the upper brain is the seat of consciousness and the conscious processes, while the lower brain carries on processes that no longer call for consciousness. Everybody knows that a great many of our physiological functions are carried on by nervous reactions that are not and never have been within our consciousness. But when we deal with the upper and the lower brain we have to take account of processes that begin in the upper brain and are afterward relegated to the lower. Take such a process as spelling. It may be said with some degree of truth that we learn spelling with the upper brain and practise spelling with the lower. All our mental processes that we call automatic are really carried on by the lower brain, though they may have been perfected in the upper. What concerns us here is the proposition that boredom has its seat in the upper brain. So long as a process is carried on in the lower brain it may weary us: it cannot bore us.

The application of these considerations to the problem of cog-working is obvious. The cog-worker carries on his activities through the lower brain. The problem that arises concerns the functioning of the upper brain in cog-processes. Since the muscular reactions to the cog-worker's situations in the factory have been reduced to automatisms it would follow that the upper brain is left free to attend to other matters. But the fact is that, while the lower brain is able to do quite efficiently all that is required of it without the help of the upper, there is always the possibility of something going wrong, something out of the common happening; and against these contingencies the upper brain must be always kept on the alert. It is this need that makes boredom possible even on the cog-work level.

Workers vary greatly in the way in which they meet this possibility. There are those bordering on the vegetative plane who take things as they come and go on living without feeling any special need of thinking for themselves, or even thinking at all. They spend most of their time at the "jest sittin'" stage. Others in varying degrees keep the upper brain in activity in certain directions while leaving it sensitive to anything that might demand immediate attention in connection with their more or less "cog" responsibilities. Naturally, the more coglike the ordinary occupations of an individual, the greater the freedom of the upper brain to range over fields interesting to him. I have always been pleased with that phrase used by the English philosopher Thomas Hobbes: "The wild ranging of the mind." Frequently people with the greatest freedom for this wild ranging are the most exposed to boredom, since their very freedom is an indication that they do not have any serious demand on their attention as a regular part of their daily life.

The boredom of people "laid on the shelf," people who have retired from active life or have been set aside by physical disability, is specially marked, and very often such people meet it by various forms of exercising the upper brain. They learn Esperanto, they work cross-word puzzles, they daydream. If they are wise they give the lower brain as much practice as they can by keeping up any mechanical activities they developed during their vigorous period.

This daydreaming suggestion is applied by many at a much earlier stage, the difference being that the young people dream forward and the old dream backward. In both cases it is an excellent corrective of boredom. It is, however, much more legitimate with the old than with the young. There is usually no need for the young to be bored to anything like the same extent as the old. There are so many outlets for the energies of the young that there is really no excuse for their using the daydream as a corrective. The positive aspects of the daydream are treated in Chapter XV.

THE MERCILESS BORE

So far we have been dealing with boredom as a result of more or less mechanical and material circumstances. When we approach boredom from the human aspect we come to a region where egocentricism shows its worst side. We are all terribly cruel to one another in the matter of boredom. Here more than anywhere else in human experience is Burns's line justified:

Man's inhumanity to man
Makes countless thousands mourn.

Some of us are merciless in our selfish demands on the attention of our fellows. People differ greatly in this matter. We have seen that psychologists divide humanity into the two classes, the introverts and the extroverts, the first always looking within and unwilling to take any active part in social intercourse, the second always thrusting themselves upon the notice of the outside world and always expecting other people to give immediate attention to what they have got to say. The introverts are free from the charge of boring, at any rate of the positive kind, but the extroverts are notorious sinners here. Some extroverts are so charming in themselves that society gladly meets their demands for attention and enjoys their flow of talk. Further, there are certain circumstances under which extroversion is an excellent quality. An eloquent clergyman is a welcome extrovert. Observant people often notice how dull at the dinner table is a man who is a brilliant speaker on the platform. It is characteristic of ungrateful human nature that the matter is presented in this way. Very seldom is it put the other way, "How brilliant so-and-so is on the platform, compared with his appearances at the dinner table." In any case the explanation of the different reaction in the two cases is not difficult.

The public speaker of this type is a merciful man. He respects his neighbours' right to direct attention in their own way. On the platform, however, he is set up to speak for a certain definite number of minutes, and it is his business to talk for that length of time. He may bore his audience, but he is at any rate a licensed bore. So he can let himself go and do himself justice, without being restrained by the desire to play the game and give the other persons round the table a fair chance to do their talking. Certainly all public speakers cannot claim this merit. Some of them exceed their limits and appear to have no "terminal facilities." Such people are bores pure and simple; they have outlived their license.

Dinner talk need not be boresome, and it is quite permissible that a good talker should to a considerable extent dominate the conversation. But there is a limit, and the best of talkers forfeit their right to talk at large if they prevent everybody else from having a show—however small that show may be. It is too often forgotten that in social intercourse the listener contributes a noticeable share to the success of the talk. If the listener is bored the conversation cannot be of the best quality, even if the chief talkers do not realize that they have become bores. Indeed, one of the best qualities of a good listener is a certain easiness in being bored. On one occasion A. C. Benson, the well-known educational writer, claimed that one of his most useful qualities as a schoolmaster was the possession of just this sensitiveness to boredom. If he is himself easily bored the master is more likely to be considerate of the feelings of his as easily bored pupils. At any rate, he is more likely to note the signs of boredom.

What are these signs? Naturally, they have a good deal in common with the symptoms of fatigue. Dr. Warner, an English medical man addicted to child study, used to say that a teacher could readily discover whether his class were fatigued or not by merely making the pupils stand and stretch out their arms at right angles to the body. If their thumbs were held horizontally in the same plane as the rest of the hand they were *not* fatigued; if the thumbs sagged, they were. A more efficient test is the asymmetrical position of the body. Other tests are the dryness of the skin and the tightness of the same. Some people have special personal tests. One schoolmistress, Sir Francis Galton tells us, declared that she could detect fatigue by the lobes of the ears. If they were white and flaccid they indicated fatigue arising from the intellectual work of the classroom; if they were flaccid and purple they pointed to fatigue resulting from the strain of keeping the nerves under control.

Others refer to the expression of the eyes, and here we come to close quarters with the symptoms of boredom. At certain stages of boredom a sort of film seems to come over the eyes of the bored one—not a real film of course but an expression that suggests one. People vary greatly with regard to the stage at which this film appears. There are some so egocentrically constituted that at your first reference to any matter that does not in some way make immediate contact with their affairs they lower the film and you know that their attention is elsewhere. Most people, however, have good feeling enough to keep the film in check for a decent interval, and if ultimately it has to come down while we are talking, we shall do well to examine ourselves to see whether we have not deserved it.

Putting the matter psychologically, boredom does not arise so long as the person concerned is giving anisic attention. To be sure, there may be no boredom even when the subject of discourse demands nisic attention. But there comes a time when nisic attention becomes painful. This may arise either from boredom or from fatigue. When one has been working for a long time at a subject in which one is deeply interested there comes a feeling of uneasiness that is certainly not boredom. The person would very willingly go on, but fatigue has supervened, and he feels that he is not doing justice to the subject, and that it will be better for all concerned to give it up for the time being. On the other hand, after dealing with a moderately interesting subject for a time, a feeling of distaste arises. The listener could go on for a long time, but there is a resentment against his attention being monopolized, and he demands freedom. Subsidiary interests, economic or social, may impel him to endure, and he may even deliberately increase the intensity of his nisic attention; but he is bored all the same, and his listening is unwholesome.

BORER AND BOREE

In ordinary life we all play the two parts—*borer* and *boree.* No doubt we may not play them quite on a fifty-fifty basis; for most of us have the clear conviction that we get considerably more than our share of the passive part. But in any case it is worth while noting the difference between the two, in order that we may play each in its turn with the minimum amount of offense.

This way of putting matters rather suggests that it is under certain circumstances justifiable to bore other people, that boring has a legitimate place in social intercourse. But here we must distinguish between being disagreeable and being a bore. There are certain things that have to be said to others for their own good, even though these others do not want to hear them. Scolding owes whatever justification it may have to its presumptive value as a moral counter irritant. But the person scolded is not technically bored. Perhaps the best way of putting our problem would be to pose the question: Are there occasions when it is justifiable to demand nisic attention when our interlocutor does not wish to give it? It would appear that the answer should be *Yes*. The professional schoolmaster spends a good deal of his time making this demand and seeing that it is effective. Yet the schoolmaster is not technically a bore. The very fact that you are inclined to question this statement suggests the thought that there must be some reason for the popular notion that a schoolmaster *is* a bore. The truth is that too often in the past the schoolmaster was a genuine bore—"within the meaning of the anti-bore act"—and the only reason why we can now relieve him of the charge is that his profession has come to the conclusion that in his work it is his duty to present his subjects in such a way as to avoid boredom, *while demanding effort.* He is entitled to make reasonable demands for nisic attention, even when these involve a certain amount of discomfort. But the study of education is gradually consolidating the professional opinion that most of the educative processes should be carried on by the aid of anisic attention. For beginning new subjects, and new branches of old ones, it is necessary to fall back upon nisic attention, but for carrying on work in school the teachers must rely upon the pupils' anisic attention.

What is true in the classroom is true in the drawing room and the smokeroom. We are entitled to demand nisic attention for a few moments now and then, but for steady social intercourse we must rely upon the anisic form. Have you considered why it is easier to begin reading a novel than to begin reading a play? It is a matter of the amount of nisic attention demanded in each case. The play requires the getting up of a list of names of characters before they are brought into action. In the novel the setting is introduced gradually, and the reader gets help from the author all along the line. To be sure, the play is intended to be seen, and therefore there is in its natural setting no undue demand on nisic attention. It is only when the play is read in the study that its special demand is made. In the old-fashioned novels an inordinate claim was made for nisic attention, because of the long introductions.

At the present day novelists are very sensitive to the dangers of such a demand. This explains why the second chapter of a novel is usually the hardest for the novelist to write. He plunges into action in the first chapter, so as to make the minimum demands on his readers' nisic attention, and has to compensate for this vivid beginning by the comparative dullness of the explanatory parts of the novel's Chapter II.

In ordinary life we may well learn of the novelist by plunging at once into the heart of affairs in any communication we may have to make to our fellows. But novelist and plain member of society alike are entitled to make a certain, though limited, demand for nisic attention. No one has any right to object to a reasonable amount of explanation preparatory to the making of a point. But the amount of explanation is the crux of the whole problem. A little study of the story-teller's method is an excellent preparation for our functioning in ordinary social intercourse. The classes established now in universities and elsewhere for short-story writing should produce excellent effects on social intercourse by impressing upon the students the need for brevity and point. But the results up till now are far from satisfactory. Those who study the art of story writing seem to keep their expository principles in strictly professional channels and do not realize that what they learn in connection with story-telling ought to be applied in daily life. The truth is that the story writer has it impressed upon him that it is absolutely necessary to avoid boring his readers, as they are free agents and are at liberty to lay aside the book or magazine and turn to something else, while the poor member of society is compelled by what is sometimes called "common decency" to put up with at least a fair amount of boredom in the cause of social comity.

In story writing it is often desirable to alternate high lights and low lights; and levels of quite feeble interests are often essential to give full effect to the interest peaks to which they lead up. The same is true of oral exposition, but here the speaker is apt to take advantage of the helplessness of his hearers. In his essay on "The Comic" Emerson gives an account of a teacher naming to a little boy the various letters of the alphabet, pointing to each in turn, the boy repeating each. "That is A," says the teacher. "That is A," drawls the pupil. This goes on throughout the alphabet till at the end "That is W," says the teacher. "The devil it is," replies the boy. The problem is how much of the alphabet must be covered in the narrative before the unexpected conclusion can be most effectively sprung upon the hearer. If the boy's crude exclamation is thrust upon us at an early stage its effect is lost, but, on the other hand, if the boresome repetition is carried on too long irritation may become too acute to allow even the final relief to carry off the situation.

SOME RELIEF SUGGESTIONS

We have here the need of an *aniameter,* or boredom measurer, to let us know the degree of boredom existing at a given moment. Unfortunately, psychological science has not yet reached this stage of accurate recording, so we must fall back upon our ordinary means of observation in social intercourse. It is not that it is difficult to discover the stage at which our interlocutor is bored, when we set about investigating; the difficulty is to get people to take the trouble to wonder whether by any possibility they are boring those to whom, or at whom, they are speaking. The moment we get a person to consider whether he is boresome or not the situation is saved.

I have just realized that this suggestion of an aniameter has come into my mind as the result of a certain uneasiness. It has been borne in upon me for the past page or two that maybe I have been boring my readers unnecessarily. That thought has not occurred in other parts of the book, so maybe it is the result of infection from the matter under discussion. In any case I am now in a position to which it is highly desirable that all of us should be reduced from time to time. The moment we are in doubt about whether we are boring other people we are not far from grace.

The number of people who know they are boring and yet continue to bore is small. The genuine bore has no thought of boring. He has no notion that in social intercourse interest is a bipolar force, that no man liveth to himself alone, that social intercourse is a matter of give and take. What we want in all our universities is a chair of Human Interest. We professors are not quite notorious for the amount of interest we impart to our lectures; all the more reason why we should encourage a more general study of the nature and application of interest. As a craft we are not altogether neglectful of this aspect of social reactions. After all, it was a professor who set up as the goal of education the ideal of *many-sided interest,* for the reader will not have forgotten that Johann Friedrich Herbart changed the place of interest from a means to an end. While other teachers seek to use interest as an inducement to learn, Herbart would have us place interest as the thing to be led up to. The finished product of education is the man who has a wide circle of interests. As a consequence he has attained a high degree of immunity from boredom. The more interests a man has, the less likely is he to fall into boredom at the first remove.

But even the best educated man in this Herbartian sense can avoid boredom only up to a certain point, and when that has been reached he cannot help showing it and he can endure the confessed boredom only up to another point. Beyond that, what is he to do? He has given the bore every chance; must he go on enduring, or is there any action he may legitimately take?

Lady Bell, in her charming book on *Conversational Openings,* makes the suggestion that we should apply to conversation the same principles as rule our correspondence. When in a letter we have said everything we want to say, all we have to do is to throw in a "kind regards" or its equivalent, and the matter is ended; relief is immediate. When we have endured boredom enough to satisfy our conscience in what is called "general society" why not get up briskly with a cheery, "I am, with kind regards, most sincerely yours," and fade away?

Something of this kind may have to be adopted in self-defense if the scourge remains unabated. But perhaps it will be well, before going to this extreme, to inquire within and examine ourselves honestly to see whether we ourselves are free from blame in the matter. Such an investigation is of the utmost difficulty, for it is almost impossible for us to take an unbiassed view of ourselves. But while this is true in general it is not so bad when we set ourselves to examine only one aspect of our behaviour. We have here a sort of objective standard. We can note the proportion of time we occupy in speaking during an interview or a general conversation. The chances are that if we make observations of this kind we shall find that our contribution is very moderate and that certain other people are intolerable talking hogs. The very fact that you are in a critical, self-examining mood will prevent you from talking so much as you normally would. But even if you could arrange for some understanding friend to take note of your performances at times when you could not be expected to be aware that you are under observation, the chances are that you would be found to talk rather below than above the average, the reason being that the very fact that you thought it worth while to have the observation made is an indication that you are not of talking-hog timber. You are not that sort of person.

It is your fate, therefore, to suffer bores, not gladly, it is true, yet with equanimity. But if you cannot get rid entirely of the curse of boredom inflicted by people suffering from egocentritis you can do something to ease the burden by doing what you can to relieve fellow borees. To thrust your own ego forward in order to maintain some sort of balance is a kind of homœopathic treatment that will expose you to the charge of being yourself a bore. But if you interpose on all suitable occasions some sort of barrier to the ceaseless flow of verbal lava from an egocentric conversation-volcano, by dragging into the conversation some capable but silent listener, you will win the gratitude of all but the gas bag at the time trying to hold the floor. Every time that you ask a fellow sufferer to complete the remark he made a moment ago which was drowned in the flow of the current gas bag you are doing something to establish a sort of equilibrium. A few thoughtful, kindly people without too keen a desire to talk themselves and with a strong sense of fair play could do a great deal to ameliorate the boredom under which society suffers. A perfect cure is of course impossible; even a slight improvement is worth striving for.

CHAPTER XI

THE PSYCHIC STEERING GEAR

What Is the Will?—Various Angles on the Will—Free Will?

PROBABLY no branch of psychic process exemplifies the dangers of hypostatization more than what is commonly called the will. Psychologists are getting more and more into the habit of omitting the definite article in speaking of what used to be called the faculties, since this article tends to convey the impression that we are dealing with something having a definite separate and independent existence. But while this tendency to hypostatize is marked in the case of all the faculties it takes a specially virulent form when we deal with the will. For there seems to be an almost irresistible urge impelling people to regard the will as some separate element of our personality that exists by and for itself and exercises a controlling influence over all the other faculties. Among these other faculties it appears to occupy the same position that the so-called "governing classes" occupy in the general scheme of social stratification. In spite of the best endeavours of the psychologists, ordinary people persist in regarding the will as a separate entity existing within themselves. An enraged nurse will proclaim with some heat: "That brat sure has a will of his own"; a savage drill sergeant boasts that he has "broken the will of" a formerly insubordinate private; a clergyman in his sermon urges his flock to submit their wills to His.

The matter goes deeper than words, for a great many people seem to figure a process going on within the psyche, somewhat resembling a court of justice where causes are pleaded and decisions given. The will is usually pictured as the judge, and things called motives appear before him and plead for decisions in this way and in that. When all have had their say the judge decides what action, if any, is to be taken. Sometimes the judge is held to represent not so much the will as the conscience; people say that our conscience must decide how to act in difficult cases. The Roman Catholic Church helps its followers wherever possible by reaching in open court, as it were, decisions on as many doubtful cases as it feels necessary to clear up in the interests of its world-wide flock. But there are a great many cases where only the individual knows all the conditions, and when these arise the individual must decide for himself, of course under the general guidance of the accepted doctrines of the Church. The decision, in fact, is transferred from the jurisdiction of the visible Church to the inner sanctity of the psyche. That this means a reference to conscience is shown by the roundabout phrase by which the idea of conscience is expressed in French. Where we content ourselves with the single word *conscience,* the French use the phrase *for intérieur,* which means *the inner court,* just as *for extérieur* indicates *the outer court* that is represented by the Church tribunals.

WHAT IS THE WILL?

Religious people have a way of talking of the conscience as a "still small voice within" that keeps them right in all cases of moral doubt. But while the conscience is thus personified it necessarily includes in its personification another internal force, this time the will. For if the conscience is the judge on the moral side, the will is the executive who carries out the recommendations of the advisory judge, the conscience. The figure of the court is maintained. Quite a number of people recognize more or less explicitly this personification. Socrates supplies only one, though it must be admitted a very striking, case of recognizing the existence of a guiding spirit, a daimon, that warns a person when that person is proposing to follow a line that is likely to lead to disaster. People provided with such a monitor say that when they are about to come to a foolish decision this inner spirit gives them warning in time. To be sure, the psycho-analysts, as we have seen, have supplied an efficient explanation of this phenomenon. But if the whimsical daimon has been relegated to the unconscious his place has been taken in the conscious experience of many people who now work on the notion that the *will* is a sort of inner spirit that makes up their minds for them. They do not formulate the matter quite in this way, but the daimon figure not inaptly represents their attitude.

The motives, too, are apt to be hypostatized, and they play their part in the inner court that the popular imagination sets up. These motives are often arranged according to their power of influencing a decision. Some are called powerful, others weak, some are reduced to the level of being trifling. One of them rejoices in the commanding title of "the strongest motive." When these motives are examined in detail it is found that their strength, after all, is not inherent, but is conferred upon them by the psyche itself. When we are in a position where a decision has to be made we do not make a collection of motives and pass them in review to discover which of them is the strongest, and follow that. It is we ourselves who determine which of the motives shall be the stronger or strongest. So far from the motives determining the decision of the judge by exercising an innate power over him, they derive from the judge himself whatever power they possess.

The truth is that the whole figure breaks down. There is no will as a separate entity any more than there is a separate entity of the memory, the imagination, or the judgment. The so-called will is merely that aspect of psychic process that is concerned with direction. Sometimes it is said that will is concerned with *action,* and the adjective used to mark off the sphere of will implies this view. This adjective is *conative,* coming from the Latin verb *conor,* which suggests doing, striving, energizing, in other words *acting,* so long as we keep the idea of the stage out of our minds. But willing must not be limited to the realm of action in this narrowed sense. It has to do with psychic processes as well as physical, as is shown in the peculiar use recently introduced in such phrases as "the will to believe." We may will to do nothing at all. When, after a bitter discussion on a public board, the decision "no action" is reached, it cannot be said that there has been no exercise of will. There has been a clash of wills for maybe a couple of hours and at the end no overt action follows. Yet something very definite has been accomplished as soon as the decision has been registered.

Willing has been sometimes defined as the process of choosing between alternatives. This supplies a quite acceptable quarrelling ground. Critics are at once on hand to say that will is seldom limited to a choice between two. There are nearly always a great many possibilities put before the will. If life consisted of an endless series of dichotomies which have to be made by the psyche as occasion rises, the choice of alternatives might be accepted as the function of will. But while we are very fond of pointing out that we are "at the parting of the ways" and that we have "reached a turning point," we do not in real life come up against only bifurcations. We are continually reaching places where crossroads occur, and others where even half a dozen roads all present themselves as candidates for our further progress. Here the ingenious debater in favour of alternative choice is ready with a plausible argument. Even where seven roads meet the work of will is always to choose between two. He points out that, while the word *alternative* literally means a choice between *two,* in ordinary usage it really means a general choice. But even if this is not admitted, every time that half a dozen courses are open the choice must include the whole in a series of individual choices. Shall I take A or any-one-of-the-rest? Shall I take B or any-one-of-the-rest? and so on throughout the tiresome catalogue. Leaving the ingenious debaters to their dialectic exercises, we return to the figurative judge who is sustaining the rôle of the will.

So long as he plays his part we can talk easily about his functions, and these we have decided to be directing the course of experience. From what has gone before we realize that the judge personification is not so satisfactory as "the man at the wheel," whose business it is to guide the ship or the automobile. The importance of his function cannot be questioned, yet his relation to the other functions of the psyche gives rise to uneasiness. It would appear that will takes to itself a dominating share in the working of the psyche and may thus lay itself open to a charge of undemocratic conduct in the psychic republic of functions. Who is the will, it may be asked, to set itself up as a ruler over the others? After all, it is only *primus inter pares,* merely the first among its equals. But the explanation may be offered that, after all, in the distribution of spheres for the various functions some must take precedence of others, just as some bishops must become "arch" as separated from the others. The three provinces of the realm of psyche have each its separate function, and the successful working of the whole depends on the proper functioning of the different parts. It is not at all necessary to quarrel about the relative values of the different contributions. As Longfellow puts it simply in "The Builders":

Nothing useless is, or low,
Each thing in its place is best;
And what seems but idle show
Strengthens and supports the rest.

We have emphasized in season and out of season the essential unity of the psyche. While there is division of labour there is no disruption; the psyche always acts as a single organism. Since no one of the aspects of our personality can claim to function alone, it is unfair to try to claim that one aspect is more really the self than is any other. But somehow will has always occupied the first place in sizing up a personality. It is the element that stands out most prominently in all matters involving moral evaluation. People say that, after all, will is what determines our actions, and "by their *deeds shall ye know them.*" All the other modes of being conscious play their parts in getting together the material with regard to which decisions have to be made. But when the case has been fully prepared it is what in everyday speech we call "the will" that determines the final line of action. This material-gathering depends a good deal on the functioning of what we have dealt with as attention. Indeed, so clearly is this activity connected with volition (that is, willing) that we have seen that psychologists sometimes identify attention and will. The moment we concentrate our consciousness on some set of circumstances that suggest action, action almost inevitably follows unless attention discloses elements that indicate some forces that are likely to lead to trouble if the obvious line of action is adopted. Attention brings before the psyche all the possible lines of action, and the psyche, being impelled to activity of some sort, accepts the line that promises the best results. Those who identify will and attention are tempted to take too mechanical a view. They are inclined to deprive the psyche of all responsibility—which is not good for the psyche.

VARIOUS ANGLES ON THE WILL

But this mysterious function of will is not always in active operation; at any rate, on the conscious plane. A great part of our lives is carried on without the witting exercise of will. Often great blocks of our experience demand no interference from the head of the conative department. Things happen in regular order; the cognitive, the affective, and the conative processes go on their way without friction. It is this smooth sailing that sometimes tempts critics to regard the man at the wheel as a psychological superfluity. No doubt in the psyche, as in the ship and in the automobile, the controller may have long spells during which he suffers boredom because things go as monotonously as they should. But all the while little shifts of wind for the ship, and small turns of the road for the automobile, call for apparently trifling but really important changes of direction, and occasional actual crises occur, demanding all the skill at the steersman's disposal. It is not to be denied that even in these cases of crisis will often seems to act mechanically, depending upon its paid-up capital to carry it through. It is because the psyche has acquired this reserve stock of skill to meet emergencies as they occur that the behaviourists can rest content with treating man as more or less of an automaton.

But there is another department of conation where deliberate decisions must be made on which high moral issues depend, and in these connections we have a new angle from which to approach will. We hear people talking of strong and weak wills, but when we begin to ask them what they mean by these terms we find a good deal of confusion of thought. In point of fact, wills are not estimated as strong and weak in themselves, but in relation to other wills. A strong-willed person is commonly regarded as one who comes to a conclusion on any matter without too much hesitation and, once having reached that conclusion, sticks to it firmly, in spite of outside forces applied to make him change it. So far we have been describing a person to whom many people would be inclined to apply the epithet *stubborn*. In this bad sense the term describes a person who, once having taken up an attitude, refuses to be moved from it by any argument, however sound. Americans have a word that applies to just such a person. He is called a *standpatter*. But a person who is entitled to be called strong willed is not closed against argument. His decision remains immovable till someone gives him good reason to change it. The inducement need not be a creditable one. A monetary consideration may induce a man to change his attitude with regard to some matter without his losing the right to the title of strong willed. If, on the other hand, a man comes to a decision that he thinks right, and because of the persuasion or the bullying of some other person is induced to change his attitude while still believing his first conclusion the correct one, he shows himself to be weak willed. Into the discussion a certain element of confusion is introduced by the couplet,

A man convinced against his will
Is of the same opinion still.

Can a man be convinced against his will? If the problem is whether a man can be caused to recant a previously expressed opinion very much against his inclination, the answer cannot be other than *Yes*. But if it means, Can a man be made to change his real opinion against the natural working of the laws of his psyche? the answer must be as emphatically *No*.

The problem of interfering with the will of another may be approached from still another angle that enables us to get a fresh view. The phrase often occurs "breaking the will." Now the question may be fairly put: Can we break the will of another? The answer must be *No*. We can certainly cause another to do what we want him to do and what he emphatically does not want to do. But that is not breaking his will, however reluctant he may be to do our will. The phrase we should use is rather "breaking his spirit" than "breaking his will." A man may be fiercely determined not to do what a tyrant commands. The ensuing drama may include starvation in an oubliette, or shameful exposure in a cage on a castle wall, and may end in a death because the victim refuses to the end to obey the command. But even if the brutal treatment results in the prisoner consenting to do what the oppressor demands, we do not have a case of a broken will. After all, the unfortunate prisoner wills to do what is demanded of him. He decides to divulge the secret or to sign the paper as the smaller of two evils. But whatever force is applied, it is he who ultimately makes the decision to act in the way that is least displeasing to him. The baffled prisoner in such a case has not forfeited his claim to have a good-going, and even a strong, will. That he prefers to betray a trust rather than be boiled in oil does not mean that his will is out of order.

There is obviously some confusion here. Everybody knows exactly what is meant when it is said that somebody's will has been broken. There is no practical ambiguity about it. But all that this means is that the word *will* is used loosely in ordinary speech. So important is the steering aspect of the will that in ordinary conversation *will* has come to mean the very essence of the man's nature. All his qualities are gathered up in this one aspect of his functioning. Kant maintained that will had this peculiarity, that it was the only thing in the universe to which the word *good* could be applied without any qualification whatever. The *good* will was the sole thing in the experience of man that was entitled to the adjective without any limiting clause. So we are not surprised that this will aspect of man's nature, the aspect that has to do with the direction of behaviour, whether psychic or physical, should come to represent the whole of man. When we use the phrase "to break the spirit" we speak more accurately. The term *spirit* is really used as equivalent to *psyche* and includes the whole human being.

As a special mode of psychic process will may well be kept to the choice between various possible lines of activity, whether psychic or physical. It is obvious that this function of choosing is really the function of directing the lines of experience so far as these lie within our power at all. It is not difficult to see how this power of choice soon came to be identified with the most important elements in determining the nature of man, and in particular with that aspect of human nature that is known as character. It is reasonable enough to speak of a strong or a weak character, and quite easy to see how the adjectives *strong* and *weak* are transferred from character to will, through which character is most easily read.

If, then, will be accepted as the power of choice we should not use the terms *strong* and *weak,* for a choice is a choice and may differ in the various effects produced by the sort of things that are chosen; but there is no discrimination in the strength or weakness of the choice. We either choose or we do not choose, but there is no question of the strength of that choice. Will should be graded as efficient or inefficient. In the first instance the ease and definiteness of the choice is the determining quality in estimating the efficiency of will. The nature of the things among which choice has to be made is not in itself relevant to the nature of the will in question. No doubt in any given case of choice the nature of the elements to be chosen among has a very definite effect on the functioning of will. The tensity of the situation is determined by the nature of the decision to be made. But a good-going will functions better than a less efficient one, whatever the nature of the elements among which a choice has to be made.

Half a dozen wills could be graded in order of general efficiency apart altogether from the relative amount of disturbance that may be introduced by the presence of certain specific kinds of possibilities of activity. A first-rate will works quickly, definitely, and decisively, and wills may be, theoretically at least, arranged in a descending order of efficiency down to the lowest grade, the descent being marked by an increasing hesitancy which at last terminates in a total inability to make a choice between two possible lines of conduct. When this final stage has been reached we attain once more to a definite technical term. Folk who reach the lowest rung on the ladder and positively cannot make a choice are said to suffer from a disease called *aboulia.* Few indeed there be who reach this ghastly psychological nadir, but in the region just above aboulia there is a distressful array of undecided persons who do a great deal to keep down the spirits of clear-thinking, sharply decisive men who have to deal with them. We have not yet had any definite suggestion of a *boulometer,* or will measurer, but it will be strange if in some remote psychological laboratory there is not at least a solitary experimenter working on the invention of such an instrument.

Warning ourselves that there are no such things as wills but only occasions on which decisions must be made, we may classify psyches according to the ease with which they make decisions directing the whole course of psychic life. The undecided gentleman who gives us some amusement in the comic papers, and so much exasperation in real life, is an unfortunately frequent *dramatis persona* in our everyday experience, while in serious drama he plays a not insignificant rôle. When Lady Macbeth says to her husband, "Infirm of purpose! Give me the daggers," she is really accusing him of having an inefficient will, not a weak one. She might have justly charged him with having a weak character, for that would have included his whole psychological make-up.

An equally misleading use of terms may be found at the other end of the scale, where pig-headed people get the credit of being strong willed simply because their wills function badly.

What has been said above takes away a good deal of the dignity usually attached to will in our ordinary dealings with one another. It is often understood to indicate the innermost citadel of the psyche, and self-surrender is regarded as carried to the extreme when we submit our will to the will of another. The supreme surrender is supposed to be expressed in the line of the hymn,

Take my will and make it Thine.

But when we examine the underlying idea closely we find that it hardly expresses what theology would lead us to expect God to demand from us. At least some theologians tell us that we were created by God in order that He might the better express himself by His reactions upon us and ours upon Him. If, then, we merely hurl ourselves back upon Him we are not fulfilling the purpose for which we were created. We can accomplish that purpose only if we retain our own wills and exercise them as independent human beings in the way in which He would have us. When we speak of our will we are referring to the way in which we express most fully and truly our whole nature.

Those troublesome things called motives need to be treated a little more fully in order that we may get a clear idea of how they are related to will. We have seen that they are commonly personified and treated as if they had not only a separate existence but inner powers of their own. In point of fact, they are merely the modes in which the psyche presents to itself the advantages and disadvantages of various possible lines of conduct. A curious reasoning in a circle marks the treatment of many of the motives but particularly what is called "the strongest motive." When asked why a person followed a particular motive the answer is, "Because it was the strongest." If, continuing the investigation, we ask, "How do you know it was the strongest?" the convincing reply is, "Because it was the one the will followed."

What really goes on when we are in the process of making up our minds about some proposed line of activity is that within the mysterious region of the ego the active force stimulates all the relevant concepts on the subject, with the result that a general stimulus is set up, and concept after concept is stirred up from its slumber in the unconsciousness and finds its way into the consciousness where all the relevant materials are gathered for review. Each concept brings in its train a following of concepts formerly connected with it in situations bearing a certain resemblance to the situation that has now arisen. Some of these connections are pleasant, some disagreeable. Some accordingly suggest that the action in question be allowed to take place. The displeasing connections, on the other hand, suggest caution and recommend at least delay. As the evidence accumulates and forces urge decision in this way and in that, there comes into being a sort of parallelogram of forces such as used to torment us in our junior mechanics class, and if all the interplay of forces has followed the normal course a line of action is more or less automatically reached, as it used to be in the mechanics classroom.

Now all this is extremely displeasing to many of us. We have been too successful in explaining the working of will. We appear to have explained will away altogether. There is nothing left. The will, with or without the definite article, would appear to have disappeared, swallowed up in that devouring parallelogram of forces where it was last seen. Turning back to where we last saw it at work, we reach the motives again. Once they get comfortably settled down in the force parallelogram, they are at peace and give no further trouble. The parallelogram does the rest and grinds out the mathematical conclusion. But their origin is a different matter. It is the psyche that called them into being. No doubt they are by their very nature themselves a part of the psyche, which like the fabled pelican has torn them out of her own breast. This is an uncomfortable origin of the will and suggests all manner of pertinent but unanswerable questions. Yet these need not trouble us unduly, as they are only what we were prepared for when we dealt with "The Great Mystery." We have here only a breaking out in a new place of the old trouble of the inclusion in the psyche of the subjective and the objective in the one organism. The psyche is at the same time the producer of the motives and the judge to decide among them. Will is only the name of the psyche in its conative aspect, as it may be named the mind when we deal with it in its cognitive aspect.

FREE WILL?

We are here brought back again to the essential unity of the psyche. We cannot split it up into sections. Will is not a thing in itself but merely a mode in which the psyche manifests itself. This aspect, however, is of special importance since it involves the whole problem of human freedom. As a rule this matter is discussed under the familiar heading, "The Freedom of the Will," with which indeed we are all acquainted in some form or other. To be sure, the problem is not a specifically psychological one. It is usually treated in theological or philosophical connections, but all the same it cannot be quite overlooked in a general treatment of psychology. We cannot talk intelligently about the directive aspect of the psyche's activities without considering how far it is free in manipulating these activities. When the question is asked: Is the will free? it is really equivalent to asking whether the psyche is free.

The natural answer of the plain man is that he is free. He feels that way. He has a strong impression that he is at liberty to choose his line of action all through a long day's experiences. Further, he feels responsible for his choices. No doubt there are those who are continually laying upon others, and still more upon circumstances, the blame for whatever wrong choices they have made. But most of us are willing to accept the responsibility frankly, and all of us in our hearts admit to ourselves, though we may not to others, that we could have acted otherwise than we did under certain circumstances, and are therefore justly blameworthy for our choice. This is the natural and unsophisticated attitude. But there come along argumentative people who maintain that this feeling of freedom and consequent responsibility is all a mistake. We only imagine we are free, say these disquieting critics. We are all definitely dominated by the circumstances under which we live and by the qualities which we have inherited. We live in a world in which everything is determined. One thing leads to another in an unbroken chain of causation, and freedom is not in us. They bring forward all manner of convincing illustrations of our lack of freedom and induce in us an uneasy suspicion that perhaps they may be right, and that our feeling of freedom may be after all only the illusion they suggest; in fact, that it may turn out to be even worse and prove itself a delusion.

The arguments of the determinists are most powerful when applied to the material world, and in point of fact we find ourselves incapable of meeting those arguments so long as we confine ourselves to the material. It is when we approach the matters of the spirit that we feel our courage returning. Suppose we admit that the material world is determined in the way suggested, it does not follow that we human beings are included under the same condemnation. Henri Bergson comes along and suggests that all living creatures are centres of indetermination. If we are to believe him we human beings are free creatures living in a world of determination. To the casual onlooker a swarm of gnats darting hither and thither in the sunshine appear to amount to pretty much the same thing as a crowd of dust motes swirling in a sunbeam. But the Bergson school would regard them as representing two totally different sources of motion. The motes are purely material particles, and their movements exemplify the interaction of the various laws of motion as elaborated by the physicists. They are like so many billiard balls that move in certain calculable ways according to the forces applied to them from without. The gnats, on the other hand, move hither and thither at their own wills. To the onlooker the results appear as incalculable and as purposeless as the wild scramble of the motes, and in all probability it would be quite impossible so to analyze the movements of the gnats as to explain their movements. Yet the two sets of movements belong to totally different spheres.

We are being driven more and more to the conclusion that freedom and life are inseparably connected, that wherever there is life there must be freedom. It may even be suggested that a similar correlation may be established between freedom and consciousness, but this would involve a limitation of the range of consciousness that many would be unwilling to make. Keeping to life, then, we may be said to have the three stages, vegetative, free-moving animal, and the higher animals possessing some form of self-consciousness. With regard to the vegetative stage there is a certain degree of freedom in response to external stimuli. The plant is not compelled from without to act in a particular way. It responds to stimulus in a definite way, that way being determined by the nature of the plant itself. External forces may destroy the plant, but they cannot make it respond as plant in any other way than its own nature determines. The free-moving animal in the same way responds to stimuli in its own way and thus asserts its freedom. The fact that the environment, whether with or without the intervention of man, may interfere with and stunt the animal's development in no way takes away from the animal's freedom of development. Outside forces may turn an acorn into a good oak or a stunted one, but can turn it into nothing else but an oak.

It is when we come to man that the question becomes really important. It must be admitted that the above examples of plants and animals are not very attractive to the plain man. He regards them as after all trifling, though if he could be induced to follow a philosophical line of reasoning he would find more in them than at first sight appears. When it comes to man, however, there arises the practical problem that appeals to all of us: Are we really free agents in the plain ordinary sense of that term? In everyday life we take this freedom for granted. The whole of our criminal law is based upon the assumption that the ordinary human being is responsible for his actions. A man is punished for doing wrong, on the ground that he knew what he was doing and could have avoided doing the wrong thing if he had wanted to avoid it. Every time a man is hanged we have a concrete illustration of the belief of society in the freedom of the will.

To be sure, this argument is not so conclusive as once it was. For to-day many people object not merely to hanging but to a great many of our other punishments on the ground that the so-called criminals are not really responsible: they have merely responded to stimuli in a way normal for them, even though the results were disadvantageous to society. We are here obviously thrust back on the machine theory of man. This we have already considered and rejected. Man is not a machine and cannot therefore be treated as a machine. But the people who are making such a dead set against punishments because so many so-called criminals are really nothing but pathological cases and should be treated in hospitals rather than prisons do not go quite the length of calling their protégés machines; they are content to say that they are mechanized humans and that society is responsible for the mechanization.

There is in this plea a certain degree of truth, and this new line of argument may be used to explain the prevalence of the view that we humans are not free. In dealing with the "Psychic Paid-up Capital" and "Man the Machine" we came across certain facts that explain to some extent our apparent loss of freedom. In building up our psychic bank account we must pay the penalty. The advantages are obvious and more than compensate for the troubles that accompany them; but we must pay for the increased efficiency of our activities by a certain loss of freedom. We have seen that habit forming has had stones hurled at it, and we looked into the economic advantages and disadvantages of habit. Here we have to return to one of the disadvantages of habit—loss of freedom. As a rule, however, this loss of freedom is not to be deplored. It is usually exemplified in the case of activities that we do not want to encourage. We sometimes say that a certain man "could not do a certain thing." This need not mean that he is physically incapable of performing the action in question, but merely that, being the kind of man he is, he could not perform it. This indicates that his normal paid-up capital has so limited his possible activities that certain actions are out of bounds altogether.

The position may be well illustrated by a violent controversy that once took place on the question whether Jesus Christ could sin. The argument was that unless He could sin the Temptation as described in the New Testament was a fraud. On the other hand, it shocked the sensibilities of His followers even to think of His having anything to do with sin. But the intelligent theologians as usual found a way out of the difficulty. They distinguished between two qualities a man might possess. The first was *Non posse peccare,* the literal meaning of which is *Not to be able to sin;* the second was *Posse non peccare,* which in English runs, *To be able not to sin.* Naturally, the second was the quality claimed for Christ. It was a power unique among men, and a glorious possession, but those who argued on His side were careful not to emphasize the fact that His divine nature brought with it its limitations. Being the person He was, He could not sin.

Here, obviously, the restraint comes from within and in no real way limits the freedom of the person in question. The whole moral structure of a man's character is a wholesome restraint. On the intellectual and the æsthetic sides similar organizations lead to a limitation of the person's freedom. After a certain amount of training in art a man cannot "live with" certain types of pictures. Similar training in music makes certain popular concerts impossible to the person so trained.

But these limitations are not in any real sense an interference with the freedom of will. The cultured man who can no longer tolerate the books he read as a boy, the plays he enjoyed as a lad, the music he gloated over as a young man, is in no way deprived of his freedom. If he turns from his old loves it is not because they have been forbidden for him, but because he himself can no longer put up with them. His choice is as free as ever, only it is a different *he* that chooses. The man's will has been in no way interfered with. It works as vigorously as ever, only it differs in its attitude toward various elements in nature and in life.

All this warns us against the too common mistake of identifying free will with caprice. Many people regard the essence of freedom as the absence of all restraint. Young people in particular set up their ideal as to be able to do what they please, or if they are very young, "what they jolly well please." The wise know that a well-developed will is one that takes account of whole situations as they arise and guides the total activities of the psyche accordingly.

The old-fashioned way of regarding the development of nature and human nature lent itself to increase the difficulties of free will. It was customary to begin with material nature. This was the first datum. There was the outer world, and man was brought into being both as a race and as individuals at a later stage, so that he had to make acquaintance with outer nature as he found it and make the best he could of it. The newer view is that spirit came first, and that matter is something that opposes the free action of spirit, and in that way enables spirit to develop by reacting upon outer hindrances. Now philosophers point out that it is possible to pass from freedom to necessity but not from necessity to freedom. The old idea was that matter began, and then by and by spirit came on the scene by one of those "emergences" of which we have already spoken. But as matter belongs emphatically to the realm of necessity there was no possibility of freedom emerging from it. On the contrary, since spirit is now assumed to come first, there is nothing to hinder freedom from developing into a necessity in certain directions. This is what has taken place in the development of human nature both in the individual and in the race. Purpose can be attained only through free activity, but this activity has to be manipulated and guided in the most advantageous way. Efficiency can be attained only by sacrificing a certain amount of that freedom which itself developed the purposes which it wishes to realize.

The whole process of development may be better understood if reference is made back to what was said about the growing point in Chapter VIII. All the developments that take place have their restrictive side, and the more fully the whole is developed the more the freedom of the individual is limited. But since the growing point is left in full activity, the freedom of the psyche is left intact, while the organization of the whole has so increased its efficiency that the psyche at its growing point can have a richer and fuller life than it otherwise could. It is only one more of those numerous cases in which we have a parallel to the famous saying that he who would save his life must lose it. In our case, by limiting our own freedom we actually increase the range within which we are free.

CHAPTER XII

SUGGESTION, HOME AND FOREIGN

Laws of Association—Auto-Suggestion and Coué—The Psychology of Selling—Suggestion and Literary Art—The Psychology of Temptation—Suggestion and Education

PROBABLY no term in psychology has a more sinister connection than *suggestion*. There appears to be something mean and underhand about it that repels the decent, straightforward man in the street. A friend of mine wrote a book on the subject that proved a great success, but many of his acquaintances refrained from congratulating him because, as they explained, they would much rather he had written about something else. The process has got into bad company, and in particular it has got mixed up with the disagreeable side of sex psychology. When we hear a book or a picture described as suggestive, we do not take it as a compliment. We infer that the things suggested are not particularly elevating, and indeed that they belong to a specially low moral grade. This is quite unfair to the word, which began life, as so many others, on a quite respectable plane. But words, unlike sparks, have no natural tendency to fly upward; indeed, their bias seems to be in the other direction. So we need not be surprised after all to find that suggestion, like the girl in the play, has taken a wrong turning.

To be sure, the psychologists do not countenance this disagreeable meaning. Their own way of treating the word, however, leaves much to be desired. As usual they differ a great deal among themselves, and some of their definitions are a little discouraging for the non-professional psychologist. Mr. William McDougall, for example, tells us that "suggestion is a process of communication resulting in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance." This is not the sort of thing for which the plain man has much use. For him suggestion implies something that leads to action of some sort or other. So he finds somewhat more satisfaction in J. M. Baldwin's definition, "the tendency of a sensory or an ideal state to be followed by a motor state." Janet, the French psychologist, has a rather useful formula for suggestion: "a motor reaction brought about by language or perception."

When all these have lost their psychological chill they amount to no more than a statement that suggestion is a process by which certain activities are originated by an appeal to the paid-up psychic capital. There are, in fact, the two processes that are closely connected with one another: association and suggestion. By the first all the elements of the mental content are grouped together in some reasonable way so as to bear a certain definite relation to the ordinary experience of the individual. This is the constructive process. But when we want to use this paid-up capital we fall back on the process called suggestion. By calling up this, that, or the other idea the psyche can set in motion a series of activities that will work in a certain way because of the structure imposed on the whole in the process of building it up. Ideas and concepts are so associated that when they are called into play they act in certain fixed ways, these being determined by the application of the Laws of Association.

LAWS OF ASSOCIATION

In manipulating our paid-up capital we find association working in two different ways, divergent and convergent. If we hear a certain word mentioned the psyche may fly off in several directions, each leading to some element associated with the word mentioned. No doubt the first ideas called up in the psyche are those that have at the moment the strongest presentative activity. But given sufficient time, and freedom from distracting competing concepts, the psyche will pass in review all the available associated ideas. This exemplifies divergent association.

Convergent association occurs when a number of different concepts all tend to produce or reproduce the same whole. For example, the sight of a church window may recall a whole cluster of religious concepts. In fact, the internal arrangements of an old church are such as to help to produce a state of mind suitable to religious experiences. The particular form of architecture, the arrangement of pews, the kneeling attitude, the antiquated phraseology of the officiating clergyman, the peculiarly solemn tone of the music, sometimes even the odour of the incense, all combine to produce just the state of mind the founders of the church had in view.

An excellent, if tawdry, example of the working of convergent association used to be found in some of the cafés of Paris. These had some striking title—for example, the Café of Death—to indicate what was to be expected inside. On entering those gloomy portals the customer found instead of tables groups of coffins standing upon trestles; instead of bells to ring there were thigh bones to rap on the coffins; the only illumination was supplied by death lights; for beer mugs there were trepanned skulls; the waiters were dressed as mutes. In spite of the silliness of the whole, the customers, sensible, non-sentimental people though they might be, were disagreeably impressed by the setting. The convergent effect of association was so great that most of them were impelled to beat a speedy retreat and rejoice once more in the comforting sun outside.

Here we have the deliberate application of suggestion. The manipulators of church and café alike wittingly arranged matters so as to produce the reaction they desired. With these illustrations in view we may make something of the chilling psychological definition of the German psychologist, Wilhelm Wundt: "Suggestion is an association accompanied by a concentration of consciousness engendered by the association." He adds the limitation that the term applies only "to those states of consciousness excited within us which are strong enough to resist—at least for the moment—the ordinary states of consciousness that tend to destroy them." The state roused by the coffins and their accompaniments must be strong enough to resist the ordinary atmosphere of a French café, if suggestion is to do its perfect work.

The most important aspect of suggestion, however, is that which leads to action. Thus we find that a French professor, P. Félix Thomas, defines it as: "The inspiration of a belief, the true grounds of which escape us, which with greater or less force tends to realize itself." Another French writer, J. M. Guyau, supports this definition by his own "the introduction of a practical belief that of itself realizes itself." Having thus paid due homage to the professional psychological mandarins, we may turn to our own practical way of looking at matters and treat suggestion as the mode of manipulating our paid-up psychic capital with the minimum amount of that "escape of consciousness" with which we have already dealt.

AUTO-SUGGESTION AND COUÉ

It has to be noted that suggestion may be said to be of two kinds, as hinted in the title of this chapter. It may be exercised by the psyche within its own borders. It may do its work "on the premises," as it were. But, on the other hand, it may be manipulated from without. The first kind, indicated by the term *home* in our title, is usually called auto-suggestion. The other kind has no similar familiar name, though Wundt does help us in this matter by speaking of it as "foreign suggestion." In point of fact the foreign form really subtends a bigger angle in the popular imagination than does the home kind. An explanation of the absence of a distinctive popular name for the more prominent of the two forms is to be found in the fact that in the popular estimation the gentler home product is neglected altogether. The man in the street has no use for the term *auto-suggestion.* He is only beginning to notice that such a term exists. Up till now he has regarded suggestion as of one kind only, the kind that appeals from without to the individual acted upon.

This lack of a popular name for the home product of suggestion must not blind us to its real importance. Auto-suggestion is in operation all the time, though we are not always aware of its activities. It can be carried on in two ways, wittingly and unwittingly. Probably the unwitting form is the more important of the two, though, as we are about to see, the witting form has recently come rather prominently forward. We very often seek out environments without knowing exactly why, and yet on analysis we find that the attraction is through certain elements that from within suggest desirable experiences. We put ourselves in the way of getting the requisite stimuli. Sometimes, indeed, we do this deliberately: but very often we do it and can yet maintain quite honestly that at the time we did not know why. A good many of our moods are thus produced by auto-suggestion. For example, a great many of our imaginary ailments are the result of this unwitting suggestion. This, of course, is an unwholesome form of auto-suggestion, but it inspired a French pharmacist, M. Coué, to oppose the pathological form by a wholesome one. If we can be induced by unwitting auto-suggestion to feel that we are unwell when there is nothing the matter with us, may we not be made to diminish the evil effects of real illness by wittingly suggesting to ourselves that we are not so ill as we think we are?

This use of suggestion caught on with the public and became so popular that it gave rise to a new -ism, and people began to talk of Coué-ism. Coué's plan is very simple and direct. There is no mysticism about it. It makes a straight appeal to the optimistic element in healthy human nature. The procedure consists merely in the assertion to one's self a certain number of times every day, the number varying probably in the inverse ratio to the patient's optimism, a statement to the effect that all is well with his health. The phraseology got rather stereotyped, but M. Coué had no objection to that. His is not a scheme that is based on mere ceremonial; it depends for its effect on the state of mind produced, and does not, as in so many other cases, rely upon the exact reproduction of a sacred formula. The recognized incantation takes the form, "Day by day, in every way, I am getting better and better." But another formula would do just as well for M. Coué. So with the number of times the statement has to be repeated. This may be left to the individual needs of the patient. It is true that M. Coué goes the length of recommending the use of a string with a certain number of knots tied upon it, these knots to be used in counting the number of times the formula has to be repeated, but in his psychological rosary the exact number of knots is not of the first importance. The essential point is the state of mind induced in the patient.

Perhaps M. Coué would have been truer to psychological principles had he made a more rigid use of his symbols. For many of those whom religious people call "the weaker brethren" would derive a certain encouragement from a well-organized ritual. But maybe he knew quite well what he was about and left the scheme slack so that his patients might select whatever degree of wittingness or unwittingness their natures demanded for an effective cure. There can be no doubt that in many cases distinct good came to his patients, and the wise student of human nature will be able to read into this scheme all the wholesome effects that *faith* in various forms has had in influencing the moral and physical state of ordinary human beings. An important result of this little *excursus* into the possibly good effects of auto-suggestion is that it has had some effect in enabling suggestion to reëstablish its respectability, and in all conscience it needs every bit of help it can get in that direction.

THE PSYCHOLOGY OF SELLING

Indeed, we have now to approach another of the charges against suggestion. It is accused of being really at the bottom of all the psychologizing that goes on in the way of enabling groups of people to exercise an unfair influence on other groups. In particular, the public are getting restive under the arts of those who want to sell things. There never was a time when aggressive sellers did not develop means of stimulating trade. But there is a world of difference between the sellers at an old English fair rending the welkin with their ceaseless shouts of "Buy, Buy, Buy!" and the wiles of the present-day salesman or saleswoman. The alarm of the public cannot be said to be unjustified when salesmanship is actually taught in some universities and has behind it all the resources of psychology. Window dressing is a sort of passive form of salesmanship, dangerous enough in its way, but quite negligible in comparison with the wiles of the actual seller. The science of salesmanship sets as its goal the provision of means to enable the seller to make possible buyers—these have now been raised to the dignity of a technical term and are called "prospects"—see the need, or at any rate the desirability, of the commodities offered. It is not necessary to demonstrate either the need or the desirability of the articles offered: it is enough that the "prospect" is made to think them necessary or desirable.

Here, indeed, suggestion finds one of its most profitable fields, and also one of the most fertile sources of its unpopularity. The afterthoughts of buyers are often sad, and do little to raise the reputation of suggestion. All too late the cajoled purchasers see through the methods of the skilful salesman and are able to analyze out his plan of operations. They note, for example, that the salesman is continually taking things for granted. For instance, he assumes that the only problem before the prospects is to determine the sort of thing they want to buy. It is taken for granted that they want definitely to buy something, and they do not get the benefit of the supposition that they may have come in merely to explore the possibilities of the case, and find out how far their resources can go in a certain direction.

When a little girl was sent into a store to buy a seventy-five cent music case and came out with a dollar one she gave not a bad exposition of the methods of scientific salesmanship when she explained that somehow the man seemed to think she had bought the dollar one so she let it go at that. The process penetrates far down in the scale of business. The psychological newspaper boy does not limit himself to the suggestion, "Have a paper, Captain?" he thrusts a couple of papers in his face and yells, "*Times* or *Express?*"

There is really nothing wrong with all this, and with a great deal more that we ordinary unsophisticated buyers know nothing about beyond its devastating effect on our pocketbooks. Indeed, the teachers of Salesmanship take a high tone and explain that their motive is to train salesman so as to help buyers. In truth, many of us buyers need all the help we can get when we stand in front of a counter, and on many occasions we cannot but admit that the person on the other side of the counter has proved very helpful. But the general public is becoming increasingly suspicious, and the more articulate section is beginning to demand courses in our schools and colleges in the art of sales resistance. If ever such a course is established, one of the most prominent items in the curriculum will be the psychology of suggestion, for in suggestion lies the real power of trained salespersons. Their goal is the rousing in the mind of their prospects the desire to possess the things that they have to sell. In plain English the salesman's function is to tempt his customers. He is a professional tempter.

This unpleasant reference introduces a word which is another among the most sinister in our language. To be sure, it shares with *suggestion* itself the satisfaction of being well connected. It began life quite respectably, coming as it did from thoroughly sound stock. Originally it meant nothing worse than trial or probation. There is nothing morally wrong with testing or proving. But evil communications corrupt good reputations, and if we are engaged permanently in testing unworthy material a little bit of the reputation of that material sticks to us. Frail human nature, when put to the test, very often makes a bad show, so that the tempting or testing of human nature began to be associated with the shady side. Gradually an evil change came over the meaning of the word, and it began to signify that testing of human nature that naturally led to evil deeds. In this way it acquired its present meaning of leading people astray from the paths of righteousness.

The connection of all this with our present subject is not far to seek, for the process mainly used in temptation is this very suggestion with which we are concerned. Naturally, the process of temptation is not very popular. No one is likely to pride himself on being a successful tempter. So it is only natural that tempters should prefer a nice inconspicuous process, like suggestion, to attain its end. But this desire for privacy is not enough to explain the value of suggestion to the tempter. For we must look at the matter also from the tempter's standpoint, since under certain conditions temptation may be quite respectable. It has left to it a sort of remnant of its old respectability. We can still tempt to good as well as to evil. We can tempt into the paths of virtue as well as into the paths of vice, though the thing is rather clumsily done. We have only to compare the way in which the clergyman on Sunday presents his case with the way in which the tempter on the other side sets out his wares, to realize the advantages of the extra-pulpit advocate.

There is a sort of no-man's-land between virtue and vice, within which the word *temptation* may still be used without an evil implication. The doctor may urge his nurses to tempt the patient to eat by presenting to him specially attractive dishes. We can literally tempt to good as well as to evil, but in the great majority of cases the word *temptation* is permanently wedded to the wrong side.

For example, in what has just been written about the temptations to virtue held out from the pulpit, there has been in the reader's mind a sort of resentment at the whole phraseology. He feels that we have no right to put the clergyman and the pander on the same level. But it is worth while looking into the matter a little farther, to see if we cannot discover a better reason why temptation finds suggestion such a desirable means of carrying on its work.

No doubt temptation is generally better conducted under the protection of secrecy. It is not something of which either tempter or tempted is particularly proud, and perhaps here we get some hint of the cause of the comparative ineffectiveness of the pulpit appeal. Those who are on the side of virtue are generally proud of their connection and are not inclined to let their light be hidden under a bushel. They are so sure they are on the right side and so pleased with their own virtue that perhaps they are a little indiscreet in their approach. There may be a little too much of the bludgeon in their method, and plain common folk do not respond so readily as they might to a more tactful advance. Americans have a rather ugly phrase to indicate their way of disposing of commodities. They are very apt to speak of "selling" these, even when they refer to such matters as are quite intangible and are not offered for sale in the crude sense of that term. For example, they will speak quite seriously of selling education, or health, or even social recognition. I have myself heard a heated discussion among high-placed educational administrators of the propriety of using the term *selling* in connection with the provision of education. Some of them maintained that there could surely be nothing wrong with talking about selling education when a part of the educational administrator's duties is to persuade the public to provide bonds for the carrying on of educational work. The less sensitive psyches may even go farther, and I should not be greatly surprised to hear arguments in favour of extending the courses on salesmanship so as to include the selling of religion from the pulpit. After all, it is only a matter of expression, and, though I should not myself like to put matters in this crude way, there is no doubt but that many of our clergymen would be none the worse for going through a course that would do for the pulpit what the present courses do for the shop counter.

If such a course were ever started we may be sure that, as in the present salesmanship courses, great stress would be laid on suggestion—not because there is anything underhand or unfair in it, but because it calls into play a fundamental tendency of human nature, the tendency to work from within outward rather than in the other direction. We have seen that we are all egocentric whether we will or no, and that in certain connections it is good that things should be so. Within limits it is well that we should view matters egocentrically, though we are wise to keep ourselves well within the wholesome range that lies outside of the pathological form that we have called egocentritis.

After all, in many connections the egocentric point of view is the only one available. The result is that in seeking to influence others we are wise in presenting matters in such a way as to make the person approached believe that he is acting on his own initiative. We all like to feel that in our activities we are playing off our own bat. Even in such a trifling matter as the use of figures of speech we find this illustrated. For mankind in general prefers the metaphor to the simile, and that keen logician Archbishop Whatley explains this by the fact that in the metaphor the reader or hearer has to work out the comparison for himself, whereas in the simile it is made plain by the very form of the words. When we are told that a certain member of the English Parliament was "the dinner bell of the House," we like to work out for ourselves the idea that he was such a bore that the moment he got up to speak the members of the House began to pour out as if to dinner. Out of this we get more satisfaction than out of the plain statement that another garrulous speaker "talked like a cheap jack."

SUGGESTION AND LITERARY ART

This application from the literary side is worth working up a little. We must distinguish between the active and the passive side of poetry, the work of the person who makes the poetry in the first instance and the work of the person who reads it. We find that each of these has his share in a process that would be impossible without coöperation. In developing the idea of coöperation we at once find ourselves driven back upon suggestion as the means by which the active poet secures the proper reactions from his more passive partner. Obviously, the reader is not purely passive; he takes a quite active part in the writer-plus-reader partnership. He is no sleeping partner, but pulls his own weight in the boat of poetic enjoyment. In Chapter XV we shall return to this distinction, but in the meantime the very terms we are forced to use in comparing the two functions warn us that we must not limit our consideration to the subject matter supplied by poetry alone. There is no need to confine our consideration to poetry. The principles are as applicable to prose as to verse, to fiction as to history, even to science itself. The essential point is that in all cases of writer-and-reader the reader is called upon to provide his share of material. He must be able at least to supply the appropriate backgrounds demanded by the writer.

The writer or public speaker has to recognize that a knowledge of his readers' or hearers' possible backgrounds is of the very essence of success. Unless he knows the sort of background against which his ideas are to be presented in the minds of his partners he cannot expect success in his coöperative undertaking. An excellent test of how skilfully an author is interpreting the processes going on in the minds of his readers is to be found in his use of quotations and allusions. Every time an allusion is made we have an example of an appeal to suggestion. On the other hand, a quotation is a straightforward communication of knowledge. No doubt it may be unintelligible to readers or to members of the audience, because the matter it deals with is too difficult. But there is no failure because of an appeal to a non-existent paid-up capital. Where there is an opulent background the allusive method is very attractive. Readers or hearers rejoice in recognizing a familiar reference and enjoy the feeling of being at home in the matter with which the author deals. The same satisfaction that comes from a metaphor as compared with a simile comes from the allusion as compared with a direct quotation. The danger of course lies in the possibility of using an allusion where there is no response from the partner reader. Many authors come to grief by an over-optimistic use of allusion. Their readers' mental content does not contain the ideas necessary to meet the allusive demand.

Another source of danger in this use of suggestion is the false turn that may be given in the reader's mind. A reference to J. S. Mill's *Subjection of Women* was found, for example, on one occasion to have suggested to a reader the idea that Mill was in favour of keeping women under.

Still another source of trouble is the different rate at which suggestions penetrate the minds of our knowledge partners. This gives rise to a certain confusion between the home and foreign type of suggestion. Very often a slow-working mind accepts a suggestion so long after it has been made that the leisurely psyche comes to think that the suggested idea has been made on the premises and is the slow thinker's own. Frequently, for instance, in those dreary "discussions" that sometimes follow a lecture, examples are provided of this delayed application of suggestion. The lecturer has made his point neatly and clearly and passed along to other matters. Then, at the end of the lecture, some slow-thinking hearer arises and enunciates in great and clumsy detail the idea implicit in the lecturer's clear-cut statement. The brighter and more allusive the lecture, the greater the danger of this tiresome exhibition of lumbering thought. When suffering from this infliction the clever lecturer will be well advised to take thought of his own methods and see whether he has not been too optimistic in his estimate of the general backgrounds available among his audience.

The successful author or speaker is he who keeps all these considerations before him and yet takes special care that his readers do not suspect that he has them in mind at all. The function of suggestion of the foreign type is to raise in the mind of another a train of ideas that is likely to lead to a certain psychic or physical result, and the success of the suggestion may almost be said to vary inversely as the degree in which the person acted upon realizes that the stimulus comes from without. This external stimulus, we have found, is regarded by Mark Twain as "very offensive." But no offense need be taken if the person acted upon does not know that he has been made the object of this outside force. We all object to be deliberately manipulated from without; but so long as we do not realize that the stimulus does come from without, all goes well. We think we are acting on our own initiative and actually enjoy the process.

The management of people of a contrariant disposition is largely a matter of the camouflaging of the influences we exercise over them. With the simpler sort all we have to do is to suggest bluntly that they should follow the line of action exactly opposite to what we really want them to follow, and these crude contrariants blunder into doing just what we actually want them to do. With the more sophisticated somewhat more elaborate arrangements must be made. A blunt statement of what we really want them to do may produce the desired effect by making the contrariant think we want the oppósite, but sometimes there must be a sort of dynamic movement of suggestion ranging round the possible lines of action, a kind of fencing that may go on for a considerable time during which the contrariant and the suggester are playing with each other, trying to find out what is actually at the bottom of the conflict, and sometimes the contrariant, sometimes the suggester, gets the victory.

When it comes to a matter of temptation, whether to good or to evil, we do not have the complication of this contrariance in every case. Sometimes it is there, sometimes not. What we have to keep in view is human nature in general, and the special qualities of the tempted individual in particular. We want to induce the tempted person to adopt a particular line of action, and we have to use all the available forces working in that direction. The study of temptation is far from being a merely academic matter. Nowhere in the range of psychology is there a more profitable field for practical application. It is necessary to study it from both the active and the passive point of view, since we have found that in life we have to play both parts, the tempter and the tempted. To play our part in each connection we must know the working of the other. So a little investigation into this matter is well worth our while.

THE PSYCHOLOGY OF TEMPTATION

One of the first things to be discovered in such a study is the high position given to auto-suggestion. This comes out in quite a striking fashion in a trifling study I once made of the psychology of temptation under the figurative title of *The Education of the Devil.* Working on the principle that the best way to understand a process is by studying the methods of one who is an expert in that process, I looked around for the finest expert in temptation, and found him, naturally enough, in the Devil. So far as his history and popular reputation is concerned his life work is temptation. He is a super-tempter, in fact the arch-tempter. In the quaint American phrase, borrowed no doubt from the coloured folk, a tempter is what the devil "is nothing else but."

Accordingly, it is worth while to look into his methods and see how he works his cases. Of these there are many on record, but three of them stand out as representative, and among them they supply examples of the rising quality of his work. For it must not be supposed that Satan began his professional career as a fully qualified practitioner. He had to learn his trade like another, and his early attempts show clear marks of the amateur feeling his way.

It must be admitted that his first recorded case—that affair in the garden of Eden—hardly bears out our contention. For here at his first attempt he carries out his job with complete success. But this was exceptional and can be satisfactorily explained as an example of beginner's luck. When he faced the full day-to-day application to his craft he had to learn his business and make his mistakes in the way even brilliant apprentices do. In the three cases we have selected, two from sacred and one from profane literature, we find a very marked increase in skill and can get some valuable help in our study of our present subject.

The case of Job was obviously very badly handled. The bludgeon was far too freely used and roused all the patriarch's power of resistance. Judging by this story alone the psychologist would infer that Job was of a contrariant type and realize how unscientific was Satan's approach. The more the patient was battered and injured in body and estate, the more determined he became that he would not knuckle down to this bullying interloper between him and God. There hardly seemed to be any real temptation at all. The only inducement held out was the prospect of a cessation of disagreeable attacks. It was really a case of the primitive application of the third degree and met the fate that this process usually meets when applied to an innocent man of grit. Obviously, at this stage Satan had but a poor mastery of his trade and had much to learn.

Watch the great improvement in technique at his next grand case. He leads his victim up a high mountain and thence shows Him all the glories of the world. Here is no bullying, no attempt at intimidation, nothing unpleasant. Only a little friendly chat in a sympathetic spirit; a magnification of the pleasant results to be obtained, and a minimizing of the price to be paid. Everything was done decently and in order. Had the victim been other than He was, the chances were all in favour of the success of this famous temptation. Satan failed because he was up against a power greater than his own; but, so far as method was concerned, he deserved to win.

The third and final case shows Satan as the accomplished artist in his craft, and his art is this time crowned with success, though through a lamentable lack of "the spirit of the game" on the part of the victim the accomplished tempter was not allowed to reap the full reward of his success. There are two standard reports of this crowning case, one in English by Marlowe, the other in German by Goethe. The victim this time is an old philosopher, Faust, who has exhausted all the interests, higher and lower, of human life, and at the end of it all feels that he has made nothing of it. He has learned all that is worth knowing, and yet his knowledge is of no value to him, and he complains in words that may be rendered with sufficient accuracy by the lines:

And here stand I, a wretched fool,
As wise as when I first left school.

The moment is opportune for temptation. When could Satan hope to find a better chance of taking the worn-out old Doctor Faust at a disadvantage? But from the nether regions there comes no stir. Satan has mastered his craft; he lies low. He no longer bullies as in the case of Job; he does not cajole as in the case of Jesus; he does nothing at all; he employs masterly inactivity; *he waits till he is sent for.* To Dr. Faust he leaves the disagreeable work of making the mysterious circle on the floor and mumbling the prescribed abracadabra. Only when he is thus officially summoned does Satan step upon the scene and lay down his conditions from the superior standpoint of the buyer in the market of souls. He might well have quoted the Latin tag—for with that language tradition provides him with a comfortable mastery—*caveat emptor,* which every schoolboy knows means: *Let the buyer look out for himself.* But in this case no trouble arises; the whole incident passes smoothly. In point of fact the temptation has been practically completed before Satan appears on the scene. Faust has done his own tempting, and all that is left for Satan is a matter of bargaining, and the renovated old doctor, now a vigorous young fellow, sets about enjoying his twenty-four years of pleasure, during which the contract binds Satan, alias Mephistopheles—an alias is quite in keeping with the sinister circumstances—to do the bidding of Faust and grant whatever requests he may make.

The twenty-four years run their course and Mephistopheles, having kept his part of the bargain, naturally expects that when the term expires he will be able to collect his dues, in the form of Faust's soul. But when midnight approaches on the last day of the twenty-four years Mephistopheles encounters a snag: for his old-young fellow bargainer makes a demand that is beyond the power of even the Lord of Hades. Faust, finding it inconvenient to meet the troubles that are to begin for him at midnight, has the happy thought of demanding that time shall stop at a few minutes before the witching hour. Had Einstein lived in these old times some sort of arrangement might have been reached; but in these crude days even metaphysics could suggest no means of meeting Faust's preposterous demand. Mephistopheles realizes, to his dismay, that the Latin tag he should have used was *caveat venditor*—here again the schoolboy obliges with the literal rendering, *Let the seller be careful*—for in selling his period of pleasure and renewed youth he had failed to make provision for such a demand as this of the annihilation of time. Being unable to fulfil the conditions of his contract, with that scrupulous fairness that seems to mark Mephistophelean conduct even in dealing with mortals of doubtful integrity, the baffled fiend sadly admits that he has made a blunder, and Faust goes off free.

Our sympathy with the badly used Mephistopheles must not blind us to the importance of the lesson we learn from his method, however unlucky he was in reaping the legitimate rewards of his skill. The lesson of the perfected tempter is that temptation, in the last resort, comes from within. Nobody can really tempt us unless he can get beneath our armour and work from within our personality. In a well-known passage in St. Matthew we have the words: "Out of the heart proceed evil thoughts, murders, adulteries," and the rest. The word to be emphasized here is *out*. Not "into the heart" but "out of the heart." In other words, we have here authority for the view that in the last resort there is no temptation but auto-temptation. This is an important fact to remember, whether our interest is mainly in tempting or in being tempted. For, keeping in view that we may tempt toward goodness as well as toward evil, even decent-minded persons may have a commendable interest in the temptation of others.

While this is true, and while there are certain professional groups in pulpits and other centres of social service whose life work may be said to consist in tempting toward good, it must be admitted that the main interest for the ordinary clean-living and clear-thinking man and woman in connection with temptation lies rather in learning how to resist temptation than how to put temptation in the way of others. Put in technical terms already explained, we may say that the art of successfully resisting temptation consists in reducing the presentative activity of concepts that lead to activities of which our consciences do not approve. But we found in Chapter V that we cannot directly diminish the presentative activity of a concept and that all we can do in this direction is to increase the presentative activity of rival concepts of which we approve. In this way we can crowd out evil concepts and strengthen relatively those that are desirable.

Naturally, the wise course here will be to take account of both the positive and the negative side. Not only must we try to weaken evil concepts when they have been formed, but we must try to prevent their appearance at all. An old educator in the Seventeenth Century, a certain John Amos Comenius, had a profound faith in education, and believed by its means we could mould human beings into the sort of persons we wanted them to be. It was because of this belief that he called the school *"officina hominum,"* which the schoolboy might have a difficulty in translating, because the terms lie a little outside of his everyday Latin round. Literally, the words mean *a forging place of men.* Expanded a little, this suggests that school is a place where men are welded into their proper form, a place where boys and girls are licked into shape and are turned into satisfactory men and women.

The trouble is that the schoolmaster does not, like the blacksmith, get good decent untarnished raw material. The young people who come to school are already to a considerable extent worked up. They are in no sense clear raw material. Before the schoolmaster can set to work forging the comparatively raw human material supplied into the sort of men and women he and society desire, he must frequently seek to undo some of the things that have already been done to this material. In fact, the school, instead of being an *officina hominum, a forging place of humanity,* should be called a *sarcinatorium hominum, a cobbling place for humanity.* Our own treatment of ourselves is largely of the nature of cobbling. By the time we take ourselves in hand and wish to make of ourselves something better than we are; we find that the material we have to deal with is already to a considerable extent worked up; we ourselves are not made up of uncontaminated raw material. We are at least more than half made already before we begin to take a deliberate hand in our own self-building.

Accordingly, when we do take ourselves in hand, we find that we have to do breaking down as well as building up. From our previous consideration of the building up of wholesome clusters of concepts, we get a fairly good idea of the sort of process we must follow on the positive side of building up what is usually known as character. But, unfortunately, none of us can get at this job quickly enough to prevent mistakes and malformation of clusters. To our parents and our teachers must be left the responsibility of laying the foundations.

But even these have difficulty in beginning quite at the beginning. Teachers are in particular placed at a great disadvantage here. And though parents are certainly on the scene at the very beginning they do not, in most cases, know enough about the educational principles involved to make a really scientific start. But while the ideal education, as Froebel tells us, should begin at the Annunciation, our own practical education as guided by ourselves cannot begin till the process has been well advanced, so whether we will or no we must lay our account with having a good deal of breaking down to do, as well as of building up.

SUGGESTION AND EDUCATION

The working out of the double process is well illustrated in the application of suggestion. We must eliminate from our mental content as many of the dangerous elements as we can and introduce in their place a well-organized stock of wholesome elements. To this end we must familiarize ourselves with the sort of ideas we wish to cultivate. If, for instance, we wish to cultivate a good style of writing English, we must get into the way of reading authors whose style is recognized as good, just as, if we wish to cultivate a good style of speech, we will mix with people who speak in the most acceptable way. It is as important to avoid bad models as to seek out good ones. Every time we allow a bad example to occupy our psyche we have to that extent reduced its standing in the matter in question. A wise elementary schoolmaster used to warn his young pupil teachers who were inclined to strike their pupils, a thing they were forbidden to do, "Young men, there is no use in praying every day, 'Lead us not into temptation,' if you persist in carrying about a stout pointer that inevitably suggests its use for other purposes than pointing." In the same way the futility may be pointed out of young men praying not to be led into temptation in the matter of lascivious thoughts if they persist in covering the walls of their dens with pictures from *La Vie Parisienne*.

From all that has gone before, it is borne in upon us that in connection with suggestion our work consists in two things: first, doing our best so to build up our mental content that suggestion will have wholesome material to work upon; secondly, that we train ourselves as well as we can to be ready to deal satisfactorily with whatever suggestion may at any moment present to us. We have seen that we may to some extent manipulate suggestion in such a way as to arouse certain concepts or groups of concepts. But our powers in this direction are limited when applied to our own experience, though in dealing with others they are much more extensive and are indeed bounded only by our knowledge of the mental content of the other person and of the general laws according to which suggestion works. In auto-suggestion we can put ourselves in what we consider to be a likely condition to call up concepts connected with some matter in which we are interested; but we cannot be sure that the desired concepts will come. In certain directions our concepts are so well organized that we can depend on association to work systematically enough to enable us to rely upon their coming to us at the time and in the order that we desire them. Were it not so, our orderly lives would be impossible.

But outside of these thoroughly organized regions we are to a large extent helpless in the matter of regimenting our concepts and arranging that they shall come just when we want them. We have heard Mark Twain complaining of the insubordination of his mind and his inability to maintain order among his ideas. But sober psychologists echo the protest and tell us bluntly that we cannot bring our thoughts to heel. Alexander Bain, in the section of his *The Emotions and the Will* headed "Command of the Thoughts," has an interesting passage in which he explains that we must wait upon the appearance of the ideas we need. We know the sort of idea we want, but we do not know the exact idea, and we have no means to compel it to rise in our minds. But the moment it makes its appearance we do recognize it as the thing we want. We hungrily wait till it rises above the threshold, and then we fall upon it as a wild beast does upon its prey.

Applying the figure, we may point out that, while the wild beast cannot regulate the coming and going of its prey, it can at least seek out the most likely spots for its appearance. So in dealing with our control of psychic experience we can use suggestion for all it is worth and in this way oil the wheels. But the moment we seek to manipulate suggestion so as to lead to a definite end we are passing out of the range of mere suggestion and passing into the region of what is usually called thinking. This process differs from mere suggestion, since it implies deliberate purpose, which is absent in the case of at least the home form of suggestion, outside of Coué-ism.

There is deliberate purpose in foreign suggestion, but this is applied beyond the borders of the psyche, whereas the home form is confined within the psyche, as is also this process that we call thinking. There is in fact a certain amount of overlapping between home suggestion and thinking. The moment we begin to try to manipulate auto-suggestion we imply a certain amount of what would be naturally called thinking. But after all there is nothing surprising in this overlapping, since we have spent a good deal of space in warning ourselves that the psyche is one and indivisible, and that all the "modes of being conscious" have therefore necessarily a good deal in common. This community among the different modes of being conscious is well illustrated by the difficulty we have in keeping our various psychic activities separate from one another in such a way as to satisfy the logicians. Just about this stage, in fact, we have reached a point where this difficulty becomes acute—so acute indeed as to involve trouble at the very roots of our thinking, and to raise the problem of the distinction between psychology and logic itself.

It is when we come to a consideration of the nature of thinking that we get into difficulties in the way of keeping these two sciences apart. There appears to be a sort of no-man's land between them, a territory common to both. So long as we keep to the general qualities of human nature, particularly when we consider the physiological bases, we seem in a totally different region from that in which logic finds her home. But so soon as we come to the process of thinking we find that we are not quite sure whether we are dealing with psychology or with logic. Accordingly, in these pages it behooves us to step warily. We can hardly sympathize with the haughty psychologists who blandly maintain that if logic impinges on the domain of psychology and does not accept psychological results, so much the worse for logic. After all, logic was first in the field and deserves the respect due to age. The plain man has some difficulty in understanding the horror with which logicians regard the efforts of a new science like psychology to set aside the ancient demands of a study that claims to be the mother of sciences. Logic has been described as the Queen of Sciences, the Science of Sciences, and her claim is based upon the fact that all the other sciences depend upon her for the laws according to which they carry on their work. Our science, however, contests this claim, since, after all, psychology takes the whole of human experience as her realm, and the process of thinking forms but a province of this realm. Obviously, this matter needs clearing up, and the end of a chapter is no fit place to start upon such an enterprise.

CHAPTER XIII

INTERNAL HARMONY

Four Laws of Thought—Deduction and Induction—Reconciling Our Concepts—Recruiting and Drilling Our Thoughts—The Phrenometer—The Flash—The Goal of Thinking

THINKING is obviously a specially difficult subject to handle. It has to do with the processes in the innermost citadel of our psychic being, and it is regarded as the highest quality in man, as is seen when we attempt to define man. The logicians, with whom we must come to grips presently, are fond of accurate definition. From their standpoint definition consists in stating to which class an object of thought belongs and adding the point in which that object differs from all the others in that class. Now the logical term for a class is *genus,* and for the quality that marks off an object from all other members of that class we have the term *differentia.* So, according to the logicians: Genus plus differentia equals definition. Suppose we apply this to man. The class to which he belongs may be said to be *biped.* Man certainly is a biped, but how are we to mark him off from all other bipeds. In an old discussion we are told that the differentia suggested was "without feathers." Thus man might be defined as "a biped without feathers," which seemed plausible enough till a wag threw among the contestants a plucked fowl and asked whether that could not, according to the definition, be called a man.

Naturally, logicians, being serious people, are not content with trifling qualities. They select important classes and important points of difference. Thus, in the case of man the class term or *genus* that they select is *animal.* No one can deny that man is an animal, The next stage is to find some *differentia* that will mark off man from all other animals. Several have been suggested. "Man is a laughing animal" would be quite satisfactory but for two reasons. First, the quality of laughing is not of sufficient importance in itself to warrant its use in marking off a dignified personality like man from his fellow animals. Secondly, we are not quite sure that man is the only laughing animal. The second attempt is more plausible: "Man is a tool-using animal." This is important enough as a differentia, and so far as present evidence goes man is the only animal that uses tools. So we might hesitatingly accept this definition, though Dr. Köhler's accounts of the chimpanzee's manipulation of a stick rouses some doubt here.

There are a great number of more or less humorous definitions, all good enough to be epigrams, but not serious enough to please the earnest logician. While he has no great objection to the tool-using differentia, he prefers a definition that has become universally recognized: *Man is a rational animal.* The reason for the general acceptance of this definition is that it is not only accurate but dignified. It makes a special appeal to the logician because it emphasizes the highest quality of man, and further the quality that the logician has appropriated as particularly his own. Logic is really the science of reasoning.

FOUR LAWS OF THOUGHT

Unfortunately, there is here a tiny snag against which the logician strikes. It cannot be denied that man is a rational animal, yet doubt may be raised whether he is the only one. But the difficulty may be overcome by a suitable interpretation of reasoning. The higher animals certainly share to some extent in man's power of thinking. A well-known literary man in London objects strenuously to being called intelligent. "That is not a word," he complains, "to be applied to a man; it belongs to the elephant." By introducing into the term *reasoning* the qualification that it involves not only thinking but a knowledge that we are thinking, we can raise it above the level of even the highest animal-intelligence. Reasoning, in fact, represents the sort of thing that is attended to in the logic textbooks. It is removed from the realm of practical life, has to do only with mental processes, is in no way responsible for what happens in real life. This special form of logic, called sometimes *deductive* and sometimes *formal,* is based upon certain laws, usually known as the Laws of Thought as Thought, which are removed far enough in all conscience from the sphere of practical life. They are four in number and are rather startling in their stark simplicity.

The first is called the *Law of Identity,* which makes the not unreasonable proclamation that "Whatever is, is." If we are not quite clear about this momentous declaration the logician is ready with an illuminating illustration and gives us the clarifying formula *A is A*. The second law is that of *Non-contradiction,* which maintains that a thing cannot both be and not-be at the same time. Its light-shedding formula runs: $A = not\text{-}A = 0$. The third law is described as that of the *Excluded Middle,* which informs us that a thing must either be or not-be, and if we are not sure what that means we have the choice of alternative illustrative examples: *A either is or is not,* or, if you prefer it, *A either is or is not B*. When the reader has gone over these three laws, if he does not happen to have come across them before, he cannot but be a little dazed. There is an air of unreality about them that is very unsettling. If he is old enough to have had the axioms of Euclid thrust under his notice in his school days he may remember a similar feeling of distressing futility that came over him as he read those portentous statements: "Things which are equal to the same thing are equal to one another." To be sure! "Halves of equals are equals." Why, certainly; but what is the sense of saying that? The boy never thought of questioning the truth of the axioms; his only concern was to know why old Euclid thought it worth while to put them on record. Had the schoolboy honestly refused to accept the axioms the teacher would not have blustered or coaxed; he would merely have written a kindly note to the parents breaking the news, and the rest would be left to those medical men who sign papers admitting to institutions prepared for those who do not see their way to accept the Laws of Thought as Thought. The ordinary reader's attitude after conning these laws is that of the auditor who takes his pen after going through some accounts and adds the words, "audited and found correct." There does not seem to be anything else to be said.

The fourth law we have not included among the others because it seems to have more to say for itself. It is called the *Law of Sufficient Reason,* its claim being that for everything that happens there is a sufficient cause. Here we are as willing to believe, as in the case of the other three, but somehow we are not so astonished. Indeed, we feel that we could have an agreeable argument about it. In point of fact, this law can be disputed and has been. David Hume has quite a spirited argument about the nature of causation, after reading which a man may be permitted to look askance at the fourth Law of Thought. But it is not really essential to the formal logician to maintain the truth of the fourth law. The first three are sufficient for his purpose.

DEDUCTION AND INDUCTION

As the schoolboy went on with his Euclid he began to see the use of the axioms, for out of them he found that the old geometrician had built up a series of problems and theorems which were satisfactorily worked out because the student had begun by making in the axioms certain admissions that could be called upon to justify the reasoning in the text. So with the logician. On the basis of these momentous three laws he built up a scheme of reasoning by which any man in the full possession of all his mental powers could be compelled to come to certain conclusions whether he liked them or no. This kind of logic, the kind called *formal* or *deductive,* has the great merit of being incapable of making mistakes so long as it follows its own rules. In England there is a saying that the king can do no wrong, the inner meaning of which is that since the king always acts on the advice of his counsellors they may go wrong but *he* cannot. He is always free from error. So with deductive logic; like the king, it can do no wrong. Its conclusions are invariably right. It gathers together certain propositions and uses them in such a way as to grind out results that are inevitably true. The form he uses is called the *syllogism* and is made up of a couple of statements, or propositions, and a statement drawn from them called the *conclusion*. The first two (or given) propositions make up what are called the *premises*. From the premises the conclusion necessarily follows, because of the Laws of Thought as Thought, and that conclusion is always right, if the laws of the syllogism have been properly applied.

If All English admirals are blind in one eye
And Horatio Nelson was an English admiral,
Then Horatio Nelson was blind in one eye.

This happens to be true, since Nelson chanced to be blind in one eye. But the logical result would be the same if we substituted the name of Sir Francis Drake for Horatio Nelson. Deductive logic would assure us that he too was monocular, and would not in the least waver, however convincing evidence we might bring forward to show that Sir Francis had two efficient eyes. Deductive logic is not interested in the number of good eyes admirals have; all it is concerned with is that if certain premises are true it can infallibly grind out the correct conclusion. It declines all responsibility for the premises; let others see to them.

Obviously, even logicians cannot hope to live in a practical world and keep up this heroically detached attitude. The world presses in upon them, whether they will or no. Man cannot live, even intellectually, on syllogisms alone. Accordingly, logic admits the existence of a more practical branch known as *inductive* that has the advantage of leading to new premises and to a criticism of those already presented. Naturally, this more practical kind of logic pays for its practicality by a liability to error. It cannot claim the infallibility that is the pride of deduction; for the new form has to accept responsibility for not only the conclusion but also the premises. In other words, induction has to take account of both worlds.

Naturally, induction has to have a general principle on which to found its processes. Deduction has at its base the following generalization, founded upon the application of the Laws of Thought as Thought: *Whatever is true of a class is true of every member of that class.* If it is true that all insects have six legs we may assert of any creature that is included in the class *insect* that it has six legs.

The basis of induction is of quite a different kind. It is founded on *the uniformity of Nature.* It is assumed that Nature's laws are invariable. The general principle is that as Nature has acted on any one occasion so she will act on every similar occasion. This seems a rather shaky basis in view of the exceedingly variable way in which Nature appears to act. But under the principle is the condition, "provided all the conditions are the same in both cases." It is a law of Nature, for example, that all unsupported objects fall to the ground, yet any day one may see a balloon gently ascending in apparent opposition to the law of gravitation. But there is here no exception to the law of the uniformity of Nature. The balloon, as a matter of fact, is busily engaged in falling to the earth, if only it were let alone. But as the air round about it is also anxious to fall to the earth, and, since the air is bulk for bulk heavier than the balloon, the air gets down first, and the poor balloon, while conscientiously obeying the law of gravitation, is made to appear in flagrant revolt against it.

Mistakes in the interpretation of natural phenomena are constantly occurring, so the process of inductive reasoning is always an active one, involving, no doubt, considerable danger of error, but also providing reasonable prospect of making advances and learning new facts. This process of making progress and utilizing the progress made is clearly of great practical importance and deserves careful attention. It corresponds to what in popular speech is called *thinking*. Our dealings with deductive logic are often depressing, for they seem to imply a great deal of detail in carrying on the thought process and remarkably small results in the way of actual progress.

Accordingly, the plain practical man is rather likely to welcome such a definition of thinking as promises definite application to the problems of real life. Such a definition of thinking is to be found in the words, "The process of applying means to ends, by the use of ideas or concepts." Our whole life consists in the fitting of means to ends, but this is not by any means always done by the use of ideas. Accident and the application of the process of trial and error account for a considerable amount of our fitting of means to ends. Certainly, a great number of our actions are automatic and are carried on without thinking of any kind. They are carried on through the paid-up capital of previous thinking. We are familiar with the process by which we perform certain actions as the result of thinking in the first instance, and then, gradually eliminating all consciousness from their performance, finally carry on with no need for thinking, even in the practical form in which we have defined thinking.

So long as we think in the terms of our definition we follow a clear line of procedure, whereas in the trial-and-error method we hop about more or less purposelessly from one activity to another in the hope that somehow or other we may hit upon the right line of action. Movement of this kind may be conveniently called *fumbling*. Some forty-odd years ago I was watching with great interest a series of experiments carried on by psychologists and was in hopes that they would be able to establish a sort of "index of fumble" to mark off human beings into groups. Those early researches among animals seemed to show that these creatures did all their experimenting by fumbling. A cat put into a cage, the door of which could be opened by pressing a little lever, began at once a series of wild, meaningless pawings and batterings, till a paw or some other part of the animal's body hit the lever and escape was effected. The early experiments showed that when the cat was put back in the cage it began its excited movements all over again, and might have more fumblings the second time than the first. In other words, there was no "curve of fumble." The seventh incarceration might give just as many fumbles as the second.

On the other hand, it was pointed out that human beings, even at very early stages in life, rapidly learned the trick of any such contraption. The experience of English parents and nurses bears this out. In the Victorian houses it was customary to have the nursery on the top floor. Naturally, there had to be a gate at the head of the stairs to prevent the babies from tumbling down. On this gate an ordinary door handle would have been of little use, as the tiny tots would have at once learned the trick of turning it. So a circular piece of wood of the same material as the rest of the gate, and of the size of the coin called a quarter, was let into one of the upper bars on the side remote from the landing. Pressure on this inconspicuous disk opened the gate. The scheme worked excellently till a day came, as it always did, when one of the babies happened to touch the disk. Thereafter this open-sesame plan became useless, and the parents had to get either a new trick or a new baby.

This cat and baby contrast was gratifying to me, and I set about working up my scale of fumble. But, unfortunately, the whole scheme broke down. Further investigation did not confirm the first experiments. More careful analysis with more accurate instruments showed that there *was* a curve of fumble in the case of the lower animals, and that this curve moved steadily downward till it reached a zero point at which the animal merely went directly to the lever or other bit of apparatus that opened the door.

No doubt it is possible but not profitable to make a fumble-curve for each of us humans in any of the new kinds of work we undertake, but our interest lies rather in the curve of thinking, for most of us prefer to make our progress not by fumbling but by working along the line of fitting means to ends by the use of ideas. It has to be noted that this form of thinking may be applied to matters of study as well as to those of doing. Solving a problem in arithmetic or in economics is as much in the range of this form of thinking as is the process of discovering how best to behave oneself in a given set of trying circumstances. In connection with this fumbling Prof. Alexander Bain's grim definition of thinking is interesting: "To refrain from speaking and acting."

The test of our success in thinking along the lines we have suggested is to be found in *internal harmony*. In this phrase may be gathered up the whole of the three fundamental Laws of Thought as Thought. In the last resort this is what they finally resolve themselves into. The moment contradictory concepts appear within the psyche dispeace is set up, and cannot be removed till a reconciliation has by some means or other been effected. This process, so far from being a hindrance to thought, is really its most wholesome stimulus. One of the world's greatest philosophers, Hegel, maintains that all spiritual progress is gained by a steady reconciliation of opposites. The same may be said of the working of practical thinking. We are continually finding within the dome of consciousness certain ideas or concepts that do not agree with one another; so we must set about reconciling them, and in this process we find the road to progress. Sometimes these antagonisms between concepts make their way naturally into our consciousness in the course of ordinary experience, sometimes they are introduced by outside influences. Our teachers during our school days, our clergymen during our more mature life, and our friends and enemies all through life, take a hand in making us aware of these internal contradictions.

RECONCILING OUR CONCEPTS

At any time in our experience our psyche contains a number of such contradictory concepts; but they give us no trouble at all so long as they are not brought face to face in our consciousness. Only by co-presentation in consciousness can these contradictory concepts be made to give us trouble. The occupants of pulpits spend a great deal of their time in trying to bring into the consciousness of the occupants of the pews certain concepts that somehow or other have been kept apart and have not found themselves together in consciousness. Members of the congregation naturally avoid bringing secular and sacred standards together in the consciousness, and the honest clergyman as naturally does his best to bring into consciousness at the same time those two standards, and thus bring out whatever contradictions they involve. It is the clergyman's business in morals and religion to rouse dispeace in the psyches of their congregations, so as to set up oppositions that demand reconciliation. This is no doubt what was at the back of the mind of the zealous old clergyman who publicly prayed that his congregation might become uncomfortable.

On the plane of knowledge the teacher should do the same thing. He wants to bring into the consciousness at the same time concepts that he knows to be contradictory to each other and in this way set up dispeace that can only be removed by the reconciliation of the opposing concepts. Unfortunately, it does not follow that this reconciliation results in an attainment of the truth. All that is necessary to attain peace of mind is to establish some sort of agreement between the conflicting concepts. Often one erroneous combination of concepts merely gives way to another, both combinations being wrong. The business of the clergyman and the teacher is to arrange that when he has broken up a false combination of concepts he secures the establishment of a combination that is not only self-consistent but consistent with the truth. Examples of the process will be supplied as we go along in this chapter.

The process by which clergyman, teacher, friend, and enemy alike work is known as *confrontation,* which means the presenting to the psyche certain concepts that are inconsistent with the concepts at present comfortably arranged within that psyche. The philosopher who made most use of confrontation was old Socrates at Athens. A little more than four hundred years before Christ this old thinker roamed about the public places in Athens doing his best to get the Athenians to think clearly. His great idea was that if people would only take the trouble to find out the meaning of the terms they used they would avoid a great many of the fallacies to which their loose thinking gave rise. His plan was to wander about, and in an innocent way ask those he met what they meant by certain terms—truth, justice, government, virtue, and things like that. The persons attacked usually replied readily enough, because they thought they knew. Each answer Socrates would meet with some objection, showing that this particular answer at any rate would not meet the case. The interlocutor would try again, and again Socrates would confront him with a new matter that roused further doubt. This went on till the worried interlocutor got annoyed and would ask Socrates what *he* thought was the proper answer. But Socrates had no use for this line of work. He never explained anything; in fact, he prided himself on never telling people anything. He always made them find out things for themselves. Indeed, he used the figure about himself that he was the midwife that brought to birth the ideas of those on whom he operated.

His method had three stages through which his victims passed: (1) confidence without foundation, (2) doubt with a desire to know, (3) confidence, but this time with good foundation. The interesting point to us at present is the process of confrontation. To illustrate, take the case of a use of the Socratic method actually made by a skilful teacher with a class of children in school. The youngsters were about twelve years of age, and the subject was "lies." The questions were all asked by the teacher, but the answers were given by different pupils. For convenience we shall represent the pupils by the mere letter P and the teacher by the letter T.

TEACHER: What is a lie?
PUPIL: Saying what is not true.
T.: When Columbus came back from his great voyage he said that he had discovered a new route to India. Was that true?
P.: No.
T.: Was it a lie?
P.: Why, not exactly, but——
T.: Well, then, what *is* a lie?
P.: Saying what is not true, and knowing it is not true. Columbus did not know he was not speaking the truth.
T.: Sir Walter Scott wrote a great many stories that were not true, and he knew they were not true. Was he a liar?
P.: Well, no.
T.: Can you improve on your definition of a lie?
P.: Yes. It's saying what is not true and knowing it is not true and trying to get other people to believe it.
T.: Yes, but don't you know that Sir Walter did his very best to make his stories appear true? In fact, it is one of the things people praise him for. They say his stories are so lifelike you would almost believe they *were* true.

P. (desperately) : Lying is saying what is not true and knowing it's not true and getting an advantage from it.

T.: But Sir Walter got an advantage from his stories. He got a great deal of money from them, and a deal of honour and glory.

At this stage the pupils got discouraged and did not venture on any further definition. But they wanted to know. Accordingly, the teacher proceeded.

T.: Suppose a boy runs round a field in seven minutes and says he ran round it in six and a half, is that a lie?

Here the pupils gave a hearty and unanimous *Yes,* and the teacher by a little judicious probing easily elicited the opinion that the essential difference lay in the fact of an *unfair* advantage.

Here the teacher stopped and left the class with the impression that they had reached a satisfactory definition of a lie. Probably the teacher was right. For all practical purposes, and for pupils of that age, the definition was enough. For grown-ups, however, a great deal more would need to be said before the matter could be dropped. For the young it is not an unreasonable plan to treat all lies as bad and unpardonable. But more mature people know that there are such things as white lies, and gray lies, and, in fact, lies of all the colours of the rainbow. There are lies that by some would be regarded as actually meritorious. We cannot fancy old Socrates himself dealing with this subject without introducing what his great pupil, Plato, would call the "noble lie." One sees scope here for all manner of confrontations and corresponding reconstructions of already existing clusters of ideas.

In real life, of course, things do not go so swimmingly as they do in a Socratic dialogue, but ordinary experience makes its own arrangements to confront the ordinary person with undeniable facts that are inconsistent with elements in his mental content that he believes to be facts. Dispeace immediately follows, and the psyche in question cannot rest until the contradiction is removed in some way or other. One of the two opposing claimants to rank as fact must give way, and then the pacified psyche can attend to other matters.

RECRUITING AND DRILLING OUR THOUGHTS

While it is of vital importance to discover all cases of contradiction within the mental content, it is equally important to prevent wrong combinations of concepts taking place. In building up the mental content two forces are at work: there is a nutritive process and an organizing one. To use a military figure, in developing the army of thoughts there have to be both recruiting and drilling. New material must be continually supplied, just as new recruits must be continually added, if the national army is to be kept up to the mark. But the mere supply of men is not enough; they must be drilled in order that they may play their part efficiently in the whole structure. So with the psyche, there must be a steady supply of new concepts in order that the mental content may be enriched; but there must be systematic organization of these concepts so that they may act with efficiency. The very word we use in school and college for this sort of work has a military reference. The word *instruction* comes from the Latin verb *instruere,* which, among other things, means to arrange soldiers in battle array. Those of us who have not forgotten our struggles in the junior Latin class will recall Cæsar's favourite phrase *instruere agmen,* which we translated with vim as *to draw up the line of battle.*

In modern education instruction has the double implication of supplying new ideas (commonly called giving information) and organizing the ideas we already possess. It is of the first importance that no idea be left lying about loose in the psyche. Such isolated elements are not only more or less meaningless, but they also interfere with the efficient working of the whole. We have seen already that the whole mental content is organized into clusters of various grades of size and importance. We can take wide or narrow views of our mental content according to our needs, and the arrangement of the combinations of concepts is such that we seldom lose sight of the meaning of the material we are dealing with.

In fact, this element of *meaning* is so important, so fundamental, indeed, that all experience is divided into the two great unequal groups, experience with meaning and experience without. As was to be expected, there are two names waiting at our disposal to mark off these two groups. The two terms are connected with a Greek word *nous* (commonly rhymed with *mouse*), that means something equivalent to our word *understanding*. "A man of *nous*" indicates a man who knows his way about, who can skilfully pull himself out of a tight place if he gets into one; in short, a man to be reckoned with. Leaving the chilly region of Greek, we may get practically the meaning we want by using the vulgar term *gumption*.

Two adjectives are coined from the Greek word to distinguish between the two kinds of experience. *Noetic* is the adjective applied to an experience that is intelligible: one that can be described in detail. On the other hand, if it is confused, inchoate, and beyond the reach of detailed description, it is called *anoetic*. If a man has a real nightmare he awakens in a holy horror and is quite unable to recall a single detail of the ghastly experience through which he has passed. He is left a quivering and perspiring wreck and cannot for the life of him say what it was all about. He has gone through an *anoetic* experience. If, on the other hand, in dreamland he has gone through one of those humiliating experiences connected with insufficient clothing in public places, or with the thousand and one hindrances that arise to prevent him from catching a train to fulfil a hideously important engagement, he has gone through a disagreeable but quite *noetic* bit of life. When you waken in a strange bed and have no idea where you are or why, the truth soon dawns upon you. But just before this dawn, and while the wonder is still vivid, the experience is *anoetic*.

When in such cases the person passes from the anoetic state to the noetic, he may be said to attain *noesis*, which merely means that he is in a position to realize the intelligible aspect of the circumstances in which he finds himself. In his *Analytic Psychology* Prof. G. F. Stout was the first to make extensive use of this idea of noesis, but it was afterward worked out in greater detail by Henry Sturt in his *Principles of Understanding*, where he defines the term as "cognition of form." This may be thawed out into meaning the noticing of some general arrangement that gives a meaning to a group of otherwise meaningless elements. Half a dozen musical notes sounded with no relation to one another give us an anoetic experience. There is no form to be cognized or observed. These same notes, sounded consecutively in a fixed order and in a definite arrangement as to time, make up a part of the air of, say, "Old Folks at Home," and thus supply us with a noetic experience.

Of course a set of isolated straggling notes may suggest to us that our neighbour is about to begin his evening practice on the cornet, in which case they give a noetic though unpleasant experience. They have, in such a case, a quite definite meaning. A dozen meaningless syllables on a page result in an anoetic state on the part of an observer, whereas these same syllables so arranged as to form connected words lead to noesis. Isolated and meaningless elements may be raised to the noetic stage by the application of any principle of arranging them into an intelligible whole. The following words suggest processes that may lead to noesis: *scheme, plan, rhythm, pattern, organization.* The connection of all this with the *Gestalt* psychology is very clear. Henry Sturt was a configurationist without knowing it.

The value of noesis in our ordinary living and thinking is obvious. We can deal with a far greater number of objects when arranged according to some definite plan or pattern than if they have to be treated as separate disconnected units. Psychologists have discovered, for example, that it is eight times easier to learn by rote syllables that form part of known words than to learn them as isolated meaningless units.

A very little reflection will serve to show that the vast bulk of our experience must be of the noetic type. In drunkenness, in delirium, in certain rare and confused circumstances, anoetic experience may dominate, but in ordinary life it has only a fleeting appearance at certain interstitial periods between sleeping and waking, or in connection with the use of certain drugs. The question then may be asked whether there are degrees of noesis. This offers a fine opportunity for chilled discussion. But we are better to keep out of the controversy, and adopt the view that experience is either noetic or anoetic, and that any apparent difference in clearness depends more on the amount and organization of the relevant knowledge than on the mental state itself. A particular experience is either noetic or it is not: if it is we make it richer or clearer, but we cannot make it more noetic.

THE PHRENOMETER

At this point the whole question of knowledge naturally emerges. The chill authorities here drop a cold blanket over the whole scene by establishing a secondary science to deal with the matter under the respect-compelling title of epistemology, the science of knowledge. Fleeing from the wrath hidden under that name, let us substitute for the science of epistemology a gentle and unobtrusive figure of speech. Let us introduce an imaginary instrument, the *phrenometer.* Professional students of psychology are very fond of instruments, the brassier the better. The phrenometer has no brass at all; has indeed no material of any kind. It is frankly a mere figure of speech. But it has a certain value as an expository device. Warning ourselves at regular intervals that we are here dealing with a purely figurative item, let us picture to ourselves an instrument after the pattern of the thermometer. As this means literally an instrument for measuring heat, and a barometer an instrument to measure weight, namely the weight of the air, so the term phrenometer should mean an instrument to measure the mind. As *therme* is the Greek word for *heat,* and *baros* the Greek word for *weight,* so *phren* is the Greek word for *mind.*

As a matter of fact, the psychologist when he enters the laboratory of the physicist begins to break the tenth commandment in the matter of instruments like the thermometer, with its two fixed points, and all the intermediate grades between. Since our phrenometer is in any case a myth, there can be no great objection to supplying it with the two coveted fixed points, corresponding to the freezing point and the boiling point of water. On the phrenometer the lower of the fixed points may be called the *inference point,* the point at which the logical process of inference begins. All that goes on below the inference point may be said to take place in the *observation zone*. The mental process that takes place within the observation zone is carried on without any definite or deliberate reasoning of any kind. This zone is the sphere of the paid-up cognitive capital of the past experience of the person concerned. In the past, perhaps, the person had to do a certain amount of reasoning and kept on making inferences. But by the time certain elements of the mental content have been reduced below the inference point to the observation zone there is no longer any need for inference of any kind. In the observation zone we come to conclusions without having to be aware of any reasoning process. It may well be that certain mental processes have been so often repeated that at later stages the conclusion jumps to the mind without any process at all—the whole of the intermediate steps being practically annihilated.

A man comes home at night, and as he passes upstairs says to his wife, "I see Jack's come in." Now he sees nothing of the kind. What he does see is a straw hat with a bright ribbon round it, a cane, and a pair of gloves. He does not reason out the situation, noting the various pieces of evidence, and then gathering them together into something like a syllogism, so as to draw the elaborate conclusion, "Therefore Jack has come in." He merely glances at the articles and jumps to the conclusion at the observation zone.

A great deal of our lives is carried on in the observation zone, and well carried on at that. An experienced old fisherman glancing over the bay says, "I see it's going to be a fine day to-morrow." What he really observes, of course, is a particular glow in the sky, a certain direction of the wind, a characteristic feeling in the atmosphere, a peculiar conformation of the clouds over the hills. From all these the impression is borne in upon him that to-morrow is going to be fine. In all probability he would be unable to retail all the elements that go to build up his impression that the bay is on the eve of good weather.

Approaching, now, the inference point, let us take the imaginary case of a man who falls ill. His wife calls the doctor, who takes a glance at him and scribbles a prescription, talking to the wife the while, and that about indifferent topics. When the doctor goes the man is indignant and complains that the medico has not done his job. He has not sounded the patient, has not called for a look at his tongue, has not even asked him to say "ninety-nine," as every self-respecting doctor should. If the wife knew enough about practical psychology she would reassure her husband by pointing out that everything was in order. For the doctor was working on his observation zone. He knew all about the patient's history and disposition and had treated him before for influenza, the trouble that is at present in question. There is an epidemic of flu at the time, and the doctor is dealing with scores of cases. He knows exactly what to do without any thinking on the subject.

Next morning, however, when he calls again, he finds the patient somewhat pink. Now an influenza patient, it seems, has no right to be pink on the second day of the attack, so the doctor wonders why. He has reached the inference point the moment he begins to ask himself questions. This time the patient has no cause to complain of lack of attention. His tongue and all the other symptomatic spots are duly examined, and the doctor, prescribing a soothing powder (which, he remarks to himself, will at least do no harm), goes off, promising to return in the afternoon. He rushes home after his morning round, so as to look up his books to see if he can get any information about chromatic symptoms in influenza. He gets little satisfaction from his books and less from his patient, whom on the afternoon visit, he finds slightly orange. Returning to his surgery he rings up a colleague, Dr. Maddison, telling him about his troubles and asking him to come to visit the patient along with him. The two of them are shocked at the state of the patient, who has now developed a bluish tint. The two medical men are by this time well up the inference zone of the phrenometer, but have not quite reached their limit. So they propose that a consultant should be called in, and the wife agrees to their summoning the distinguished chromatic specialist Whitson. He comes along with them in the evening, only to find the patient slightly tinted green. The three doctors go into the parlour and come to a conclusion unfit for publication. They have reached the upper of the two fixed points on the phrenometer scale, for they have got to the end of the inference zone, as the space between the inference point and this higher point may be called. They can no longer make any inferences, they do not know which way to turn, they do not even know what questions to ask, they have reached what the French call the end of their Latin, so they may be fairly said to have reached what I like to call the *gaping point*. Now when one reaches the gaping point what must one do? The answer is, *gape*.

In real life what is usually done when the gaping point is reached is to give up the problem for a time and attend to something else, in the hope that by and by something may occur that will throw some light on the subject. Even though the new light may not lead to the immediate solution of the problem, it enables the investigators to make some progress by giving them a new line along which they may work. For, so long as an investigator can still go on asking intelligent questions and looking for new points of attack, progress may be made. It is only when an absolute block occurs that we reach the real gaping point.

Since our mythical doctors have served our illustrative purpose by reaching their gaping point, we may dismiss them with thanks. If such a case as theirs could occur there is no doubt but that a waiting policy would have resulted sooner or later in something turning up that would have reduced them once more to the inference zone, within which they could move about with confidence, since they are familiar with the regular applications of the ordinary logical principles.

Metaphors are centres of temptation; they lure us on to greater and greater detail. Just as there are in the thermometer various subordinate fixed points between the freezing and the boiling point of water—such as blood heat and what is vaguely termed summer heat—so there might be interpolated in the phrenometer between the inference point and the gaping point certain intermediate stages. Just below the gaping point, for example, we might insert a point to be named *the groping point*, but with that addition we must inexorably resist the temptation to further elaboration. The groping point may usefully represent the stage at which, while almost entirely in the dark, we still have some material at hand among which we can move more or less intelligently. We can still ask questions and make suggestions, whereas at the final gaping point we are reduced to helpless inactivity.

Frequently, in working out a problem, we have plenty of data, but are unable to manipulate them in such a way as to find a place for each of them in an intelligible whole. In such a case we are dealing with noetic experience, for, though we cannot satisfactorily correlate all the elements with which we are dealing, we are quite clear about the meaning of each, and we also see our way to make intelligible compounds out of them, though maybe not the particular combination that will meet our present need. Perhaps the matter may be best put in this way: our experience with regard to the material we are dealing with is clearly noetic, but with regard to the experience as a whole we are in an anoetic state. We cannot for the life of us make out what it is all about; we cannot hit upon a general principle that underlies, and gives meaning to, the whole. We are at the groping point, and all we can do at that stage is to go on groping in the hope that a guiding light will in due course appear.

Take the case of an old lady interested in church affairs. The following incident actually occurred, but for the sake of clear exposition we shall put it in what the grammarians call "the vivid present." She gets a letter from her clergyman so badly written that she cannot make out a single word. Indeed, were it not for the printed address at the top she would not even know from whom it has come. She rapidly reaches her gaping point and in despair hands over the letter to her son-in-law, who, being a schoolmaster, is assumed to be a suitable person to deal with bad handwriting. Knowing nothing at all about the circumstances of the case, the schoolmaster follows the example of his mother-in-law and promptly attains his gaping point. After trying two or three times throughout the course of the day the not uncommon plan of whipping the letter suddenly out of his pocket to see if haply he may chance to take it by surprise and thus extort its secret, he hits upon a word that looks like *Jehu.* He at once drops from the gaping to the groping point. Hope arises; the word is promising. For the letter is from a clergyman, and *Jehu* is in the Bible. There may be a connection. Further investigation shows that the word may possibly be *John.* Well, *John* also occurs in the Bible. What of the next word? It looks like *Peuch.* But the schoolmaster cannot recall anyone, either in the Bible or out, called Jehu Peuch or even John Peuch. The second word seems to have the second letter a trifle too large for an *e:* may it possibly be an *l?* But even *Pluch* does not seem a hopeful name in a practical world.

By this time the schoolmaster has worked up quite a list of individual words, each fairly clear in itself but none of them giving any definite suggestion of the meaning of the document as a whole. Among these isolated words is found one that attracts the investigator. When *Mothers* is added to the heap of miscellaneous vocables the schoolmaster develops a professional interest in the exact position of the apostrophe at the end. The problem arises: Does the apostrophe come before or after the letter *s?* Is the complete word *Mother's,* or *Mothers'?* While this point is being discussed the old lady, who shows no interest in the grammatical point, suddenly has a light suggested by the word and remembers that she had asked the clergyman to recommend a book that might be suitable to be read aloud at her Mothers' Meeting held weekly in connection with the church.

THE FLASH

Here the schoolmaster's familiarity with improving popular literature gives him a clear suggestion at the groping point at which he is working, and after a few fruitless attempts he brings to his mind a well-known book by the Reverend C. H. Spurgeon, and is thus able to develop *John Peuch* or *Pluch* into *John Ploughman's Talks,* a most suitable book for the old lady's purpose. The rest of the letter is deciphered with more or less accuracy by means of these key words. The most important point, naturally, was that at which a sudden light was cast upon the whole problem by the discovery of the probable purpose of the whole letter. This critical point may be conveniently called *the flash.* We have come across the term before, and we promised to return to it. The present seems the "more convenient season" implied in the promise.

In truth the flash forms quite a familiar feature in our investigations in all sorts of directions in our ordinary life. Sometimes it may be said to be local, as in the above case, in which it gave merely a sort of general suggestion which enables the investigator to follow a definite line of intelligent inquiry. A great deal of spade work has to be done before the final full explanation is reached—as in the case of this letter. Much of the rest of the letter had to be interpreted without any help from the original illuminating formula supplied by *John Ploughman.*

But sometimes the flash has a wider range and supplies in a moment the complete explanation of the whole of a complicated problem. This is what happens in the case of the sudden solution of a mathematical problem that has for long defied the attack of an intelligent student. The moment the right line of approach suggests itself all the details fall at once into their proper relations, and the problem resolves itself into an intelligible whole. Such a problem would come in here very conveniently, if we could depend upon all the readers of this book being on sufficiently familiar terms with mathematical intricacies to follow the example with ease. But in the absence of this assurance we cannot do better than fall back upon a bit of literature that everybody can understand and enjoy. It has the additional advantage of having been deliberately written to illustrate the flash. It is not to be supposed that Tom Hood, in writing the little poem that follows, had any intention of illustrating a psychological point. Psychology as such was not much in his way; it was certainly not Tom Hood's strong suit; and to a dead certainty he had never heard the word *flash* used in the sense we are here giving it. But Tom, like J. M. Barrie and the others that we have dealt with, had a great deal to do with psychological material and used this material in his own artistic way.

There is no doubt whatever that when he wrote the following verses under the title of "NO!" he had the definite purpose of mystifying his readers, whom he put into the position of understanding every word and phrase he used without being able to form the slightest idea of what the whole poem was about till the very last word cast a flood of light upon the whole. Probably after all this talk about the poem there may be some of my readers who cannot resist the temptation to imitate the bad example of the incontinent novel reader and turn to the last line first. In that case they will of course greatly weaken the flash effect. But if they do succumb they can recoup themselves by reading the poem aloud to some of their friends, and watching the dazed look on their faces as they listen, and note the startled gleam of intelligence that marks the appearance of the flash.

Here is the poem:

NO!

No sun—no moon!
No morn—no noon—
No dawn—no dusk—no proper time of day—
No sky—no earthly view—
No distance looking blue—
No road—no street—no "t'other side the way"—
No end to any Row—
No indications where the Crescents go—
No top to any steeple—
No recognitions of familiar people—
No courtesies for showing 'em—
No knowing 'em!—
No travelling at all—no locomotion,
No inkling of the way—no notion—
"No go"—by land or ocean—
No mail—no post—
No news from any foreign coast—
No Park—no Ring—no afternoon Gentility—
No company—no nobility—
No warmth, no cheerfulness, no healthful ease,
No comfortable feel in any member—
No shade, no shine, no butterflies, no bees,
No fruits, no flowers, no leaves, no birds—
November!

Probably no one but a Londoner familiar with the ghastly fogs that used to envelop that city in the second last month of the year, could get the full force of this climax; but the flash effect is certainly there all the same. The nature of the mental content of the reader or investigator always determines the stage at which the flash takes place, and also the intensity of the effect produced.

Further, there sometimes occurs a phenomenon that may be fairly called a false flash. The flash is there right enough, and for the moment it is quite satisfactory. But it does not stand the test of verification. We have all the accompaniments of the true flash, the sudden falling into intelligible order of all the up-till-then unconnected and unconnectable elements, and the superposition upon them of a unity that gives them a meaning in themselves, and also in their relation to the suggested new whole, and with all this there is the resulting satisfaction that relief from previous tension naturally brings. And yet, by and by, there turns up some fresh element that cannot be included in the new suggested unity, and the whole falls to pieces.

There is an old-fashioned parlour game that well illustrates the working of the flash in both its true and its false form. Into a book dealing with psychology, even in its unchilled form, it may seem indecorous to introduce such a frivolous matter as a parlour game. But, after all, psychology must take account of all human activities whatever form they assume, and the Laws of Thought as Thought are as prominent in our hours of recreative ease as in our times of hardest study. Besides, we get official backing from the government educational authorities of Italy. In that land philosophers have to-day been given a free hand in education, and the Gentile laws naturally express the reasoned opinions of their originator, the philosopher Giovanni Gentile. The revolution in educational theory and practice of education in Italy is embodied in many government documents but in none more markedly than in the instructions issued to the elementary teachers in the year 1924. In this document it is remarkable to find stress laid upon the value of all sorts of verbal and other puzzles as educational material. Acrostics, riddles, rebuses, missing words, cross-word puzzles, and the like, are recommended as implements in the hands of teachers. So we have the backing of philosophical educationists in bringing forward the parlour game that used to be called "Lights."

The proceeding was simple. Two of the social company would go out of the room and agree upon a certain subject of conversation. They would then return to the room and begin to talk to one another about the subject agreed upon, without, of course, giving any direct indication of what that subject happened to be. The goal of the company was to discover what the two were talking about. As soon as anyone in the room thought he had discovered what the subject was, he claimed to have got a light, and proceeded to join in the conversation of the two official talkers. In our terms this meant that the new speaker had a flash. When he joined in the conversation he was entering on the process of verification. If his flash were true all would go well, and he would maintain his position in the talking group. If, however, something turned up in the course of the conversation that would not fit in with the flash the interloper had had, it was obvious that he had got the wrong subject, and he had to fall out till some subject occurred to him that would fit in with the general trend of the official conversation. To illustrate, take the following example of a somewhat difficult object. The two original talkers let us call Smith and Brown. The interrupters will be named by numbers as they strike in.

BROWN: How many of them would you say were in this room?
SMITH (Looking round and ostentatiously counting the people present): Twenty-four.
No. 1: I dare say I may join in, for I am one of them.
BROWN: Certainly you're one of the two-legged kind.
No. 1: Then I guess I'd better subside. I don't happen to know any other than the two-legged sort.
SMITH: By the way, Brown, are there any of the other two-legged kind in the room?
BROWN: You mean the upside-down bipeds?
SMITH: Why, yes.
BROWN: Well I should say there are. Maybe a million or so.
No. 2: This is where I come in. I'm a doctor, you know, and I'm dealing with millions of the little beggars every day.

SMITH: Are you? Can you see one when you look into a mirror?
No. 2: Why, no, can you?
SMITH: Sure. Every time I look into the glass.
No. 2: In that case let me gracefully drop out.
BROWN: Maybe the graveyard would be appropriate at this stage—without any special reference to the doctor who has just sat down.
SMITH: I shouldn't wonder. But it's a gloomy turn to give the subject.
No. 3: You don't mean to say that there is one of that kind in the room just now?
SMITH: Why, no.
No. 3: Do you happen to believe that there are any of them anywhere?
SMITH: Certainly. I've seen lots of them in graveyards.
No. 3 (gaining confidence): Well, I can't say that I have. But, there, there, I don't go much into graveyards after dark.
SMITH: But they're on view there all the time—night and day. You can't have missed them if you have visited half a dozen graveyards. Nothing wrong with your eyes, I hope?
No. 3: Perfect eyesight. Let me fade away.
BROWN: By the way, Smith, haven't you seen the four-legged kind in graveyards too?
SMITH: Certainly. But I must say I don't like to see them in graveyards. They shouldn't be allowed there, at any rate above the surface. It's not a wholesome place for even the two-legged variety.
BROWN: In fact, you would only allow the one-legged kind?
SMITH: Oh, well, I wouldn't object to the right-side-up two-legged ones going there now and again. They have a certain claim to have their sentiments respected.
BROWN: Why all this gloom? Let's change the scene. How many of them would you say are to be found in the Congressional Library at Washington?
SMITH: Oh, ask me an easier one. Would 1,000,000,000 be excessive?
BROWN: I'm no mathematician. Let's change the venue again. What about a butcher's shop?
SMITH: By the way, what do they call the four-legged kind when they're hung up in the butcher's shop?
BROWN: To tell the honest truth, I don't know. Never thought of asking before. Does death make a difference in the naming?
SMITH: I'm hanged if I know about the quadrupeds, but the bipeds are called patients in the hospital, and cadavers in the dissecting room.

The above should give a clear enough idea of how the thing works. The subject the two enterprising conversationalists had hit upon was the vocable *you,* which with its variants (the chilled equivalent is *homonym*) *yew, ewe,* and the letter *U,* gave sufficient scope for mystification. Obviously, the process was not always quite fair to the listeners. To describe the yew, the favourite tree in the graveyard as the one-legged variety is perhaps making an unfair use of metaphor. But the relativity of the term *you* is legitimately used as a means of mystification. A person may be either *you* or *not-you* according to his place in a conversation. In point of fact, the subject was too difficult to encourage enterprising listeners to offer "lights." Those that did offer were not successful and discouraged imitation. With a less difficult subject there would have been many more flashes. As it was, the only offers came at the early stages before the complexity of the subject had made itself manifest. Bold No. 1 jumped to the conclusion that the counting of the individuals in the room indicated that the subject was *human being*. No. 2, without sufficient reflection and misled by the huge number and the small size of the subject under discussion, added to a natural professional bias, hit upon the idea of microbes. No. 3, none too logically, thought that ghosts might prove mysterious enough to fit into this strange gap. In all three cases verification made no progress, and the flash faded.

Listening to the above particularly exasperating conversation, the couple of dozen evening-dressed persons had their mental content in a state of unstable equilibrium. Each moment they were forming some new construction of what the whole thing was about, and each fresh utterance of the speakers broke up the attempted construction. But in real life we pass most of the time in a state of internal harmony. Thoughtful people know that there are many contradictions hidden behind this placidity, but so long as they do not clash we are content to let sleeping dogs lie. As we go along, however, a great many contradictions are brought to light by the ordinary course of our life in society, and we very often have the grace to settle up the contradiction in our mental content, without making a fuss about it, and without exposing our discovered blunder to the public gaze. Many a player at the old game of Lights must have chortled at not joining in with a suggestion that afterward was made by somebody else and shown up to be silly.

So in real life we may have gone on mispronouncing to ourselves a word common in reading but not greatly used in conversation, till one day we happen to hear the word pronounced in a way quite different from ours. Actual experience shows, for instance, that the word *misled* is a notorious example. Quite a number of educated people admit that they had nearly reached middle age before they realized that this word did not rhyme with *drizzled*. Many people complacently speak of *reinforcement* as if the word were a trisyllable, the point being that *rein* as a monosyllable seems to suggest to the speaker the idea of strength, and he knows that reinforcement signifies some sort of strengthening. The accidents of printing sometimes help to disclose confusions of this kind. For example, the meeting of *misled* divided between two lines—mis- on one line and led on another—might cause reflection and correction; though this word could stand the test better than could *reinforcement* where the presence of re- on one line and inforcement on the other would almost inevitably suggest the real meaning and correct pronunciation of the word. In other cases, however, it almost necessarily demands external pressure to bring out the error. The other day I read a novel in which the word *ostensibly* was used throughout where *obviously* was what the author should have used. This is not a mere malapropism, where a confusion of somewhat similar sounds leads to the blunder. Had Mrs. Malaprop been concerned with a muddle about *ostensibly* she would probably have written or spoken about *ostentatiously*. In that novelist's mind the true and the false meaning of *ostensibly* probably exist comfortably side by side, and will remain in friendly contact till someone, maybe a disgruntled critic, takes the trouble to disturb the internal harmony.

THE GOAL OF THINKING

One of the advantages of the Lights illustration is that it emphasizes the importance of the mental content in the process of thought. The logician is concerned mainly with the *method* in which thinking is carried on. He is not professionally interested in the subject matter. When he divides his subject into two branches, deductive and inductive, he is not keeping an eye on the nature of the subject matter; he merely, with some reluctance, admits a certain responsibility for the subject matter, as well as for the form. But when we take the mental content into account we must adopt a different attitude. The goal of thinking comes into prominence. We are concerned not only with the way in which we conduct our thinking, but also with the end we have in view when we undertake thinking at all. With this new orientation we may, on our own account, make a new classification of thinking, and from the psychological standpoint divide it into the two types, that which deals with *discovery* and that which deals with *invention.*

These two terms, *discovery* and *invention,* have always been useful subjects of debate. Argumentative people should be very grateful to them, as they provide a most attractive menu for discussion. Following our usual anti-quarrel policy, we may accept the two as meaning what the ordinary man accepts them as meaning. *Discovery* is commonly held to mean the finding out of something that already exists but has not hitherto been known. Thus, when Adams and Leverrier brought Neptune first into our ken it was said that the astronomers had made a discovery. *Invention,* on the other hand, is held to mean the bringing into existence of something that did not before exist. We can fancy the grim smile on the face of old Socrates as he set about confronting this attempt at definition, and his whimsical question: "Well, now, what about a baby? Are its parents inventors?" We have no time to let the old gentleman work his will upon us, so we must fit up some sort of working definition that will leave us free to move along the lines we wish to follow at present. Socrates has already had his innings. Let us assume, then, that invention is the process by which a person so arranges forces that they will act in a particular way that he wishes, such arrangement never having (to his knowledge) been made before. The parenthetical condition might perhaps be omitted, for an invention is still an invention for the man that makes it, even if it has been made a thousand times before. On one occasion I wanted a word to represent the passive side of education. *Educator* is the active member in the process, and I wanted a word to represent the passive member. I was not content with the word *pupil,* for that represented the passive element in the process of *teaching,* not of education. Accordingly, I invented the term *educand,* which suited my purpose extremely well. But a colleague and friend of mine came along and challenged the claim to invention, bringing forward the conclusive argument that the term had been used as far back as 1648 by Sir William Petty in his educational treatise usually called *The Advice.* All the same, I had gone through the whole trouble of inventing that term, and it had cost me just as much outlay of gray matter as if Sir William had never hit upon it.

As a matter of fact, we are inventing all along the line almost every day of our lives. But we are apt to confine the use of the term to big things, important inventions—such things as the steam engine, the radio, the automobile. But the process is the same whether we are inventing a means of seeing people at a distance of three thousand miles, or fixing up a rope in such a way that we can rock the cradle while working at a table six yards off.

There is naturally a certain resemblance in the two modes of thought—the one of which leads to discovery, the other to invention. They may be illustrated by the distinction we used to observe in Euclid's propositions. Some of them were called theorems, others problems. We soon learned that the theorems set out to *prove* something and the problems to *do* something. At the time we did not consider that the theorems were really voyages of discovery and the problems enterprises of invention.

In the first set we had a statement that things were thus and thus, and we had so to arrange our mental content that all the elements fitted into one another in such a way that the conclusion stated in our enunciation was justified. In the second set a definite end was put before us to be attained, and we had so to arrange our mental content that our activities were guided to the attainment of that end. There was room for the flash in both processes. In the case of the theorem we had to build up our structure of concepts in such a way that each fitted into the others in the way that they would have to if the desired structure were to be completed. The moment we are in a position to see that there is a place for everything in our structure, and that there are no left-overs to encumber the ground, we feel that the truth stated in our enunciation is established. The putting of everything in its place is a mere matter of detail.

In the case of invention there would appear to be greater difficulty, and if it were not for actual experience we might be willing to subscribe to the doctrine that invention is more difficult than discovery. But when we cast back our minds to our school work in the past we cannot recall that among the "riders" to Euclid the problems were in any perceptible way more difficult than the theorems. Indeed, in my own case, I feel called upon to declare that after an honest effort to recall the relative difficulties of the two I cannot help confessing that on the whole my impression is that the problems were the easier.

The natural argument is that in the theorem we have the conclusion of the whole matter stated, and all that the student has to do is so to fit in the elements that they shall hold to one another the relation required by the conclusion. On the other hand, in the case of the problem, all that is given is the end to be attained, and the student is left to his own devices in the way of finding an arrangement that will lead to the end he desires. In both cases it is a matter of making tentative combinations of the available material. If these combinations fit in with the actual surroundings, and those surroundings that the psyche sees ahead, all is well. But along the line there usually arise all manner of frictions that threaten the internal harmony, and the psyche must immediately set these right and seek new combinations that are free from this threat of disagreements. The inventor or discoverer moves about gingerly among his available materials, keeping in view all the possibilities and conditions. He gets help by continually comparing the present positions with the position that would result from certain changes. We saw at an earlier stage in this book that even the concepts that are not actually in the dome at the time of the investigation may give some degree of help by sending in advance, from the unconscious, warnings and encouragements. They do their share too in communicating a general stimulation to all the elements that have any sort of connection with the theorem or problem being treated.

The natural result of all this stimulation is an area of excitement within which are included a gradually accumulating mass of concepts all more or less connected with the matter in hand. It is not a case of mere trial and error, for the psyche is guiding the process and turning this way or that according to the amount of resistance experienced. It is a case of deliberately seeking the line of least resistance, in the hope of, in the process, reaching a point where no resistance at all is found. On the way all manner of flashes are encountered more or less true, till the final stage is reached at which a flash occurs that is not followed by some unexpected resistance. A point of stable equilibrium has been reached, there is no backfire, internal harmony has been achieved.

CHAPTER XIV

LOOKING BEFORE AND AFTER

The Workings of Memory—Mnemonic Aids—Former Criticism of the Imagination—The Case of Fairy Tales—The Artistic Imagination—Scientific Imagination—Image Explained

When making out the best case he can for man, Shakespeare includes among his finest qualities "looking before and after." Shelley takes up the same attitude when he writes: "Man looks before and after, and pines for what is not." The pining does not at the moment interest us; we are concerned with the forward and backward glance that indicates the standing of humanity. We are not creatures of the moment after all, no matter what pessimistic poets have to say about our affinity with the day flies with their fabled life span of twenty-four hours or less. (As a matter of fact Curtis claimed to have kept one alive for three weeks.) Within our threescore years and ten we have ample opportunity to exercise the forward and backward glance.

The old-fashioned psychologists have conveniently supplied us with two faculties, one of which looks after the backward glance and the other after the forward. Memory attends to the past, imagination to the future. It is true that imagination is not so definitely confined to the future as people are apt to think. Memory and imagination work together in partnership in recalling the past. When we give an account of an incident in which we have played a part, we think that we are using the memory only, but the imagination all the way through is performing an important, if unostentatious, part. We think that we remember many elements of our past experience, while we are really relying upon imagination to fill in the gaps.

Skilful cross-examiners make a very effective, if somewhat unscrupulous, use of this psychological division of labour, in order to throw doubt upon the evidence of quite honest and reliable witnesses:

LAWYER: Was the door closed when you came to it?
WITNESS: Yes.
L.: How do you know?
W.: Because I had to open it.
L.: You remember quite well opening it?
W.: Why, yes. I must have opened it, since I went into the room.
L.: I am not asking you what you must have done. I am asking what you actually did. Do you actually remember turning the knob?
W.: I can't say that I actually remember the detail of turning the knob. I was thinking of other things, as you may well imagine. But as I did enter the room I simply must have turned the knob.
L.: Oh, must you. Well, let us see. Which way did the knob turn?
W.: I don't quite know what you mean.
L.: Did it turn toward the right or toward the left?

At this stage the honest witness gets disturbed. He thinks that most knobs turn to the right, but some do not. He feels that it is a matter of indifference in this case which way the knob turns. But he also knows that if he gives the wrong answer he will throw doubt upon the general accuracy of the rest of his evidence. So he does not venture to give a categorical answer and says that he cannot remember. The lawyer at once takes advantage of this doubt and becomes sarcastic about the definite memory of the witness when a point arises that favours the side that has called on him to give evidence, and the miserable hesitancy when an occasion arises where his accuracy can be really tested. It is not the lawyer's business to disentangle the work of the memory and imagination. But it is well for us all to realize that, while the memory attends to the chronological recall of incidents, it falls back on the imagination to fill in any details that are called for. Certain of these we can deduce from the data supplied by the incident as a whole, so we may be absolutely sure that things occurred thus and thus, yet we cannot honestly say that we *remember* the details.

In reconstructing a past scene the imagination has almost as much to do as the memory. The difference between the functioning of the two modes of being conscious is that, where we can honestly say that we remember, we have a feeling of reality or recognition about what has been recalled, whereas in the work of the imagination all that we can call up is a feeling of verisimilitude and consistency. Of the filling-in supplied by the imagination we can say that it stands the test of confrontation with all the known facts of this particular incident and with the more general facts related to incidents of this kind.

THE WORKINGS OF MEMORY

Of the two, memory is more basic than imagination. It deals fundamentally with our very being, is indeed of the essence of our individual existence. Our personality would fall to pieces if we did not have memory. Sitting at dinner, how do we know that we are the same person who half an hour before was struggling with a white tie in a dressing room? This raises a somewhat different point from that involved in trying to realize that we are the same person who, say twenty-five years ago, suffered, like Bellario in the play, under "a curst schoolmaster." We may retain a general impression of how we felt in past times without being able to recall in detail the incidents of these times. In recalling those past events we naturally seek the aid of the imagination, but in so doing we are able to distinguish between the contributions of actual memory and those of imagination, even though the material that imagination works up is supplied by memory. There is a sort of authority about those incidents that memory reproduces unaided, as compared with those that are complicated by the contributions of imagination.

Memory is responsible for the framework of past experience, and for the atmosphere in which that experience is presented to us in the present. But when it comes to details those supplied by memory may be distinguished from those supplied by imagination through a certain quality that belongs to all genuine memory work. In a more or less vague way all details recalled by memory are *dated*. They have a definite chronological relation to one another, they occur in a certain order, and even if we cannot be sure that we can arrange them now in exactly that order we *know,* not merely assume or infer, that they actually did occur in time just round about the period in question.

The working of memory may be illustrated by what takes place in the process that is specifically called memorizing. We can commit facts to memory by repeating them often enough to secure their accurate repetition in the exact order and form in which they were first presented. By repeating some verses often enough we are able to say them off perfectly without any outside prompting. When this occurs we are said to remember the verses. But this is not quite the same thing as we mean when we say that we remember learning the verses. If we recall the occasion on which we did the learning, we are dealing with dated memory. It is true that we cannot remember the details of our learning. Suppose, for example, that we are asked how many times we had to repeat the verses by reading them, we probably cannot answer; and if by any chance we can honestly say that we had to read them over, say, just twenty times, we cannot go any farther. Though we can remember the verses and remember the place and manner of learning them, we cannot remember just how we felt after, say, the fifth or the eighth reading. There are in fact two aspects of memory involved here, the one dated and the other not. This second kind produces a result in skill rather than in recall. The many repetitions fuse into one another and result in a certain power that enables us to use them in one definite and fixed form.

The whole problem of learning by rote or by heart is here involved. Many people regard this form of using the memory as unjustifiable. But there is quite an important field in which it may be legitimately used. Wherever form is of the essence of the matter learning by rote is in order. Nothing is more lamentable than to hear someone referring to a little poem as something exquisite, and illustrating by quoting disjointed phrases torn from their context and nearly always mutilated besides. These are cases in which the person should either learn the passage by rote or forever hold his peace on the subject.

Some people make a distinction between learning by rote and learning by heart. The first, they say, consists in repeating the matter to be learned many times in exactly the same order till mastery is obtained, as in the case of learning a poem or some religious or scientific formula. Learning by heart, on the other hand, consists in impressing on the mind by constant repetition, but not necessarily always in the same order. The multiplication table may be learned by rote by the process of saying it over and over again, from beginning to end, whereas it may be learned by heart by the process of impressing each product individually on the mind by constant but not necessarily unbroken repetition. If the pupil is steadily exercised in giving the product of all sorts of factors within the range of the table, a familiarity with these products will arise that renders it impossible for the pupil to fail to give the appropriate reaction to any pair of factors. If in the middle of the night you waken any adept at the multiplication table with the question: Eight times seven? the answer follows automatically. A very great deal of our effective practical knowledge is acquired in this "by heart" way. A shopkeeper at his counter with a bewildering array of little drawers behind him remembers the contents of each by heart. He has acquired his knowledge by indiscriminate repetition. To learn by systematically repeating the contents of the drawers from one end to the other would have the same inhibiting effect that learning the multiplication table by rote has, where to give an answer to the question "eight times seven" the pupil has to repeat the whole of "seven times" till he comes to eight, or "eight times" till he comes to seven.

Memory, more than any of the other modes of being conscious, attracts the attention of ordinary people who have no special bias toward psychology in any form. This is not to be wondered at when we keep in view the fundamental nature of memory. It is correlated with the general well-being of the body. In no way does decay or injury of the physical system show itself more clearly or rapidly than in the impairment of memory. Further, its application to ordinary life is so direct and constant that people have their attention called to it from all directions. People are fond of blaming breakdowns in efficiency on "my wretched memory." Accordingly, the initial nature of memory and the possibility of its improvement become matters of practical importance.

MNEMONIC AIDS

The memory with which we come into the world may be conveniently called the brute memory, the untrained, unsophisticated power of retention and recall. The first practical question to be asked is: Can the brute memory be improved? The answer among phychologists is far from unanimous, but the general opinion is that it cannot. Against this decision common experience appears to give clear evidence. Cases are continually occurring in which a man who begins with a bad memory gradually acquires at least a good working memory. But it does not follow that the improvement is in the brute memory; the chances are that he has merely acquired a better way of using it. Here we have to keep in view the incentives we have to use the memory. Good observers are given to telling us that "We have all a good memory for something." A person who cannot keep the Battle of Marathon securely anchored to any date, or retain the order of the planets from the sun outward, will detail with the most complete accuracy the batting averages of an appallingly long list of cricketers, or reel off the Presidential voting returns for many years.

Interest is at the bottom of a great many of the peculiarities of individual memory, and it has been utilized from time immemorial in the way of aiding the memory in departments distasteful to the person concerned. Elements of interest are introduced in such a way as to aid the memory to carry details that are not interesting. Those whose business it is to cram medical students for their examinations used to—and I dare say still do—introduce into dry details of anatomy and *materia medica* certain enlivening, if not altogether elevating, backgrounds that made the whole entertaining enough to fix itself in the memory. For example, one of the less objectionable of these artifices was used to help the students to remember how a certain powder acted in exterminating a particular worm that had no legitimate place in the human system. Lest the student should forget that the deadly process was mechanical and not chemical, the tutor dramatized the situation by making the worm exclaim, "Is this a dagger which I see before me?" then adding the stage direction, "falls upon the dagger and dies in agony."

Silly as this expedient seems to be, there are a great many of us who, if we were quite honest, would admit that we have at least a few such devices that we apply in our ordinary lives. Certain telephone numbers present special difficulties to the memory. In most cases telephone numbers are impressed on the memory by the "by heart" process. We become so used to them that they come to our consciousness without any effort at all. But for some reason or another, which only the hardened psycho-analyst can hope to explain, certain numbers present special difficulty, and many people set up little private systems of their own to secure themselves against being caught out at awkward moments. One of my friends confessed to me that he had so often forgotten his own telephone number at awkward moments that he set about inventing a rather trifling memory scheme. The number was 2843, so he invented a greedy Irishman who was accustomed "to ate for three." This friend claimed that many a time at the end of a hard day's work he was grateful to this silly refrain.

The whole problem of aiding the memory by artificial means has produced the phrase *memoria technica,* which has been freely rendered *artificial memory*. But we can no more have an artificial memory than we can have an artificial psyche. All that we can do is so to manipulate the natural memory that it may efficiently deal with certain matters in connection with which experience has shown us that it tends to be unreliable. This need to help the natural memory has given rise to what I suppose may be called the "art" of mnemonics. Naturally, this is no new art. We find traces of it among the earliest civilized peoples. It is equally natural that in these old mnemonics we should find applications of the ordinary laws of mental activity. For example, among the Romans a favourite scheme of mnemonics was to deal with an imaginary villa, with a certain number of rooms, say ten, each of which was set apart for ideas of a certain kind. There might be one room for things connected with agriculture, another for things connected with war, another for laws, another for commerce, one for architecture, one for navigation, one for religion. The classification would be determined by the needs of each person who set up in imagination a memory villa. The plan of operation was to make as vivid a mental picture of the villa as possible, and to furnish each of the imaginary rooms with elements appropriate to its subjects. The memory trainer would in imagination keep on walking through his villa, noting as he went as much as he could recall in each room. Every time a new idea occurred to him he would make a visit to his villa and deposit this new idea in its appropriate room, and while he was doing so he would take stock of all the other elements that were stored in the same chamber.

Naturally, this villa depends for its efficacy upon the Law of Contiguity, and the plan is most suitable for those who are visuals. But those who are audiles have a line of mnemonics to suit their case. To them appeal all those mnemonics that depend on rhyme and rhythm. All those rhyming histories and geographies that have had their day and have gone to the place prepared for them belong to this class. The great trouble with them is that they require too much scaffolding. In order to remember one important fact a dozen facts of no consequence at all must be committed to memory.

The states of northern Germany
Are twenty-two in number;
The names of which I need not give
The memory to encumber.

"There are twenty-two states in northern Germany," a statement of eight words, is expanded into a quatrain of twenty-two words. The following quatrain is still worse,

The southern half's a triangle
Of greater elevation,
With several lofty peaks that reach
The line of congelation.

People who are educated enough to know the meaning of congelation do not need the help of a rhyme to remember that the Deccan is triangular and has a number of mountains that reach the snow line.

Sometimes a verse is rather useful if it fixes definitely between two alternatives that might otherwise get confused. In college we used to get mixed up between those troublesome *ides* and *nones*. To be sure, there was a rhyme that professed to keep the days of the month separate from one another. It ran:

In March, July, October, May,
The nones fell on the seventh day.

But it is clear that this was a false beacon. The verse could be twisted about in such a way as to lead the trusting reader onto the rocks of uncertainty.

In April, June, September, May,
The nones fell on the fifteenth day.

What is wanted in a case like this is that the important word should be one of the rhymes, and therefore irreplaceable by any other in the verse.

The ideal rhyming mnemonic is the one that has no scaffolding at all, that is fried in its own juice, as it were. An excellent example of this sort of mnemonic is the verse that includes the prepositions in Latin that govern the ablative. It runs:

a, ab, abs, absque, de,
e, ex, coram, cum, pro, prae,
clam, palam, sine, tenus.

There is a feeling of childishness about all this, but the desire for help of this kind is universal and is by no means confined to school. There are few of us who have not been on occasion grateful for "Thirty days hath September." Certain of our proverbs garner popular wisdom, and lest any of it should fall by the way, the results are often committed to the preservative of rhyme. Sometimes important issues are committed to the care of mnemonic doggerel. Sailors keep themselves straight in the matter of coloured lights by the couplet dealing with ships passing one another, in the sailor sense of that term:

Green to green, or red to red,
Perfect safety, go ahead.

Probably sailors find this satisfactory, but in a crisis I am afraid I might have qualms whether my slogan should not begin:

Red to green and green to red.

It seems to me just as plausible as the other, and the admonitory second line casts no illumination on the crucial point.

The commercial mnemonics for sale, of which we used to hear so much in the advertisement columns of some of the weekly papers, have really all one and the same basis, which consists in learning thoroughly by the ordinary methods of concentration and repetition some central arrangement and in referring to that central core all the things we want to remember. The schemes are often highly ingenious, but very often they are so ingenious that they cannot be applied to the sort of plain matter that we want help in remembering. For example, there is an ingenious mnemonic that I am told enables a person to remember exactly the precise moves that are necessary in chess to move the knight about the board in such a way that he will never appear on the same square twice and yet will appear once on every square on the board. This is no doubt a great feat of memory. But who wants to get up a system in order to play tricks of this kind? What is wanted is such an arrangement of matters that we shall be able to use our memory to the best advantage in the ordinary affairs of our everyday life, both occupational and personal.

This points quite naturally to a methodical arrangement of whatever matters we wish to recall easily and rapidly. We must find a methodical arrangement by observing the material we wish to bring under the easy control of the memory, or if we cannot find such a methodical arrangement, then we must impose one. In building up the inner world, we must see to it that all the elements fall into a reasonable relation to one another.

In building up groups of concepts we must make sure that they are so connected as to make it easy for them to stimulate each other in the order in which they are likely to be required. Doctors sometimes speak of what they call prophylactic treatment, which means in a general way treating a disease before it actually appears, or treating the body in such a way as to prevent the disease having a chance to develop. In a way, then, inner-world building may be said to be a prophylactic treatment of memory. By so arranging the groups of concepts as to keep them in their proper relations to each other we may bring it about that the work of memory will be lightened, by the concepts presenting themselves just when they are needed.

Most of our so-called faculties are treated by the general public as respectable. There is nothing inherently bad about them. They may have to deal with bad things, but they themselves are treated, with one exception, as irreproachable. Memory, for example, is highly respected by all. It is true that sometimes people look askance at a memory like Macaulay's which worked so well that he could remember with verbal accuracy page after page of what he had read merely once. But the public dislike of such a memory is probably at bottom caused by envy. It is not that people object to Macaulay having such a good memory; it is that they resent that their memory cannot do what his did. True it is that a trace of calumny does linger about the memory, inasmuch as there is a sort of prejudice that those who have exceedingly good memories are not very strong in other psychic directions. The prejudice is unfounded, but its origin is not far to seek. People who are not strong on the side of rational thinking sometimes are able to hide their deficiencies by falling back on their memories. In particular, when people are tested by examinations of a formal kind, it is quite possible to deceive the examiners by a skilful use of material committed to memory. This is particularly true of examinees who have a superficial knowledge of the subject on which they are being tested. They are able to make an intelligent statement of the general principles, and when it comes to really difficult points they can glide over them by the intelligent insertion of passages that they have got up by rote. Sometimes the junctions between their own contribution and the borrowed material are rather conspicuous, but in the absence of a chance to investigate the matter by an "oral" the examiner is inclined to give the examinee the benefit of the doubt. He may give vent to a sneer at mere memory work, but he is not inclined to go any farther. In point of fact, all really great men have had excellent memories, though of course the memory may not always have been of the same kind. In any case, we regard the possession of a good memory as on the credit, not the debit, side.

FORMER CRITICISM OF THE IMAGINATION

So with all the other faculties that used to adorn our psychological textbooks. Even the will got off with an admonition. It was not bad in itself, though its decisions might call for condemnation. The one exception to this good reputation of the psychic powers is the imagination. It has often been regarded askance by serious-minded people. They distrusted it and went the length of calling it names. For them it was "the busy faculty," and there is no doubt that the business attributed to it was not of a reputable kind. Its critics went the length of going to the Bible to get evidence against it, and triumphantly quoted, "Every imagination of his heart was only evil continually." We have seen in the earlier part of this chapter that it does apparently blameless work as a partner of memory, but even there we have also seen that there is a suggestion that it does not play fair. Let us look at it, then, when it appears in its own character and carries on its own independent work, to see if haply we may find some explanation of the suspicion it rouses in the serious minded.

The truth is that quite erroneously critics of the more severe order appear to have acquired a fixed idea that imagination is exclusively the field of the flightier sorts of human beings. Plays, novels, poems—in descending order of perniciousness—are assumed to tend to inflame the human soul and stimulate it in dangerous directions. Even such a level-headed man as John

Locke appears to adopt this attitude, as is suggested by the drastic way in which he speaks of poetry. Writing in an educational connection he says:

> If he, the schoolboy, have a poetic vein, it is to me the strangest thing in the world that the father should desire or suffer it to be cherished or improved. The parents should labour to have it stifled and suppressed as much as may be; and I know not what reason a father can have to wish his son a poet, who does not desire to have him bid defiance to all other callings and business; which is not yet the worst of the case; for if he prove a successful rhymer, and gets once the reputation of a wit, I desire it to be considered what company and places he is like to spend his time in, nay, and estate too; for it is very seldom seen that anyone discovers mines of gold or silver in Parnassus. It is a pleasant air but a barren soil; and there are very few instances of those who have added to their patrimony by anything they have reaped from thence. Poetry and gaming, which usually go together, are alike in this, too, that they seldom bring any advantage to those who have nothing else to live on. Men of estates almost constantly go away losers; and it is well if they escape at a cheaper rate than their whole estates, or the greatest part of them. If, therefore, you would not have your son the fiddle to every jovial company without whom the sparks could not relish their wine, nor know how to pass an afternoon idly; if you would not have him waste his time and estate to divert others, and contemn the dirty acres left him by his ancestors, I do not think you will much care he should be a poet, or that his schoolmaster should enter him in versifying.

While we cannot be excessively surprised at this outburst from a man of Locke's day and his traditions, we feel a little upset when we find Plato, of all men, uttering the same sentiments, though naturally in a milder key. He regards the poet as a sinister influence and wishes to free society from his unwholesome presence. But being himself a genuine poet, though professionally classified as a philosopher, he cannot bring himself to treat his fellow poets with contumely, so he suggests that all the poets should be called together on a public occasion and shown great honour. If I remember aright the occasion included a banquet; but in any case the bards were to be treated in the most honourful way, and then with the greatest respect ceremoniously led out of the city gates and sent to seek an asylum where their afflatus would do no harm.

Wherein, then, consists the evil of the poetic contribution that it should lead to such drastic criticism from men of such high philosophic standing? We have seen already that the poet and his like are alone entitled to hypostatize in the regular practice of their craft. It is the business of this type of artist to bring to concrete life the emotions we all feel in at least a rudimentary way. That poet's eye that Shakespeare saw in a fine frenzy rolling sees more than is within the range of ordinary men, and most people are grateful to the poet for thus adding to their vision. But there seems to be the suspicion among some of the more severe of men that the poet brings before us things that are not there, and in this way obscures the truth. To be sure, when we look into the matter we find that the poet does lead us to see in airy nothings a kind of reality, and oversensitive people—oversensitive on the factual side, be it noted—are jealous for what they call the truth. They say that the poets invent all sorts of impossibilities that confuse ordinary people and lead them astray. Such critics take rather the attitude of Josh Billings when he maintained that it did not matter so much about not knowing things as knowing so many things that are not so.

The poet's defense may be found in his very name, which means etymologically a *maker*. This is the literal meaning of the Greek word from which our English term *poet* comes. But there was no need to drag in a Greek word, or even a Latin one, for we have an exact equivalent ready made. More than that, we actually used this English word long ago. In middle English times the word *maker* was the ordinary word for what we now call a poet. The same thing applies to Scotland, where the word took the broader form of *makkar*. It has become common now to speak of poets, novelists, and dramatists as "creative writers," but the old-fashioned word *maker* was a more accurate description, for creation implies the bringing into being of what was not there before, and that without any material to work upon. A cabinetmaker does not create a chair, he makes it. So the poet does not make something out of nothing, but, out of material provided, he produces such a fresh combination that it appears to be entirely new. Some people naïvely maintain that a poet is a creator, for there is his poem, and it was not there before. Yes, but the cabinetmaker can make the same claim about his chair. A compromise is suggested by the names given to poets in the old days in the south of France. There they did not call them either makers or creators. They called them *trouveurs* or *troubadours,* the underlying meaning being *finders.* They found beautiful things underlying what to commonplace minds looked just commonplace. The plain man of all ages can be honestly described as the Peter Bell of whom it is written:

A primrose by a river's brim
A yellow primrose was to him,
And it was nothing more.

It is this something more that it is the poet's business to find, and the process by which he finds it is imagination.

There does not seem to be anything particularly dangerous in this bringing to light of qualities hidden from the vulgar gaze. But the sticklers for truth are not to be appeased, and they insist upon our keeping the poets at a safe distance. It is a curious circumstance that Wordsworth can be quoted on both sides of this controversy. We have already seen his contribution of Peter Bell, for this typically matter-of-fact person is a creation—or a finding—of Wordsworth. Yet this same poet in his "The Westmoreland Girl" makes the proud proclamation:

Seek who will delight in fable,
I shall tell you truth.

That this demand for truth at all costs, whatever be the effect on poetry and the fine arts generally, is not confined to desiccated die-hards, antique literary backwoodsmen, religious fanatics, is proved by the attitude taken up by one of the most up-to-date educationists of the present day. Dr. Maria Montessori deliberately and inexorably bars out of her educational scheme fairy tales of all sorts. These are excluded on the ground that children should not be taught anything that is not in the straitest sense of that term *true.* Most teachers of very young children do not agree with this doctrine. They hold that there are various kinds of truth, that what is suitable at one stage of advancement may be unsuitable at another, and that early childhood is the period for fairy tales. This subject will be touched upon again in the next chapter.

THE CASE OF FAIRY TALES

That Dr. Montessori is not singular in her attitude is proved by the number of parents who agree with her in demanding that their children shall be taught nothing but the literal truth. Experienced teachers tell us that it is far from uncommon to receive protests from parents against giving their children imaginative subjects for composition. Teachers find that with most children they get the best results in composition by setting some subject that allows free play for the imagination. They have good literary authority for compositions of this kind, for has not Addison himself set the example in his "Autobiography of a Shilling." But if a teacher sets such subjects as, "The Reflections of a Tramway Horse," "A Conversation Between a Dog and a Cat," "How I Would Spend a Dollar if My Uncle Gave Me One," he may get protests from parents that he must not give such subjects, as they upset the youngsters. One complaint that has frequently been made is that such compositions "put ideas into the children's heads"—surely a heinous offense. One teacher received a protest against that dollar-spending thesis, winding up with the triumphant addendum: "And, besides, the boy *has* no uncle."

In his *Émile* Rousseau has a vigorous protest against the teaching of morals by means of fables. He maintains in the first place that the children do not draw from the fable the moral that the fabulist expects. The child does not put himself in the place of the loser but the winner in the story. In "The Ant and the Cricket" he takes the rôle of the Ant. In "The Fox and the Crow" he selects the part of the Fox. It is only in exceptional cases that he accepts the smaller part, as in the case of "The Lion and the Mouse." But apart from the bad morals that he maintains are inculcated, Rousseau objects to the bad teaching of the facts of life by the presentation in the fables. But he does admit that the presentation of imaginary situations is permissible so long as they are true to life. The author is entitled to give an imaginary presentation if he does it in such a way as to lead the reader to draw proper conclusions. Finding fault with the statement that the Fox in "The Fox and the Crow" is led to the foot of the tree by the scent of the cheese, he comments:

> This cheese, held by a crow perched upon a tree-top, must have had a powerful smell to be perceived by the fox in a thicket or in a burrow. Is it thus that you exercise your pupil in the spirit of well-balanced criticism which only allows itself to be imposed upon under suitable artistic conditions, and can discriminate between truth and lying in the tales of another?

There are then "suitable conditions" under which a reader or hearer may allow himself to be imposed upon. In other words, Rousseau cannot be quoted on the side of the Montessorian attitude toward fairy tales.

The truth is that, speaking generally, the attitude of children toward a fairy tale is almost precisely that of their fathers and mothers in reading a novel. We grown-ups find an easy chair and a novel suitable conditions under which to allow ourselves to be imposed upon by the arts of our favourite writer of fiction or poetry. But we never so thoroughly lose ourselves in the plot as to be misled into believing that we are dealing with reality, and the child with his fairy tale is in pretty much the same position. No doubt when we are very young we may have a lingering hope that the story may be true. We have a vague impression that sometime and somewhere there may be a region where make-believe may assume a certain actuality. But as children we realized that here and now we could not depend upon the facts of fairyland. Children can no more believe in the actuality of fairyland than they can in the actuality of the desert island they have made in the middle of the nursery with the aid of certain articles of furniture.

The twilight period of life, during which there is a confused temporary belief in the things of the land of make-believe, passes more rapidly than many people imagine. Wordsworth, in that exasperatingly attractive poem of his—"Ode on the Intimations of Immortality"—tells us that the baby comes from his heavenly home trailing clouds of glory after him, that these clouds gradually thin out when boyhood is reached, that the youth still retains traces of his celestial origin, but that when manhood arrives the heavenly originated baby has reached the light of common day. In real life this disillusionment proceeds much more swiftly than in the lines of the kindly poet. Children rapidly acquire a distrust of the reality of "the horns of elfland," and have given them up as a myth long before they have reached the stage at which the poet introduces them to the light of common day. But they cling to their belief as long as they can, and it is reluctantly that in this matter they adopt the attitude of grown-ups. No great harm can come to them from a period of rapidly diminishing belief in the reality of things that never were, on sea or land. Certain psychologists used to have the theory that in passing from infancy to maturity human beings passed through the various stages that marked the development of the human race. If this doctrine were accepted we would have what some writers are fond of calling a "scientific justification" for the introduction of fairy tales. But really no justification is needed for the use of a kind of literature that naturally fits into human development.

We have seen memory and imagination working as partners, memory playing the chief rôle. We have now to consider whether imagination can play a lone hand, or whether the partnership must remain unbroken, though in a new set of conditions the rôles may be reversed, and memory reduced to the rank of junior partner. We have seen that memory's function is to deal with the past, though in this backward sweep it may need the help of imagination to fulfil its functions efficiently. The implication is that imagination works forward, in the way of anticipating and preparing for future contingencies. There is the further fundamental difference between the functioning of memory and imagination, that memory deals with a field that is closed, whereas imagination has a free field. In the process of recall our main aim is to set things before the psyche in the exact order in which they occurred. We wish to reconstruct the past as accurately as we can. The psyche has nothing to say about how the facts have to be correlated; its only concern is to make such a reconstruction as shall reproduce what actually occurred. But while the reconstructions that the memory presents owe their value to their exact correspondence to our past experience, the products of imagination are entirely under the control of the psyche.

The word *entirely* in the last sentence is perhaps not quite justifiable, since it would imply freedom from all restraint. Imagination, however, while free from the restrictions imposed by time, is subject to all the other limitations imposed by the nature of things. "What's done can't be undone" runs the commonplace proverb, and thus expresses the philosophy of what in the chill phrase of the professional psychologist is called the *fait accompli.* With regard to the future all the elements of the problem seem to be lying at our disposal and may be arranged in any way we please. But the moment we set about our proposed arrangement we find ourselves hedged round with conditions. All the accomplished facts that are unchangeable in themselves are not mere dead things of which no account need be taken. Each of them is a condition that must be considered in any rearrangement imagination may seek to make.

THE ARTISTIC IMAGINATION

Even in the case of artistic imagination there are many limitations. The world that the novelist, dramatist, or poet creates, or finds, need not at all resemble life either past or present, but it must be at least self-consistent. The Laws of Thought as Thought are as imperative in the realms of imagination as among the straitest sect of the logicians. All manner of modifications of the ordinary laws of nature may be permitted, but the new natural laws invented must be so applied as not to contradict one another. The world of imagination must be so arranged that the psyche is not brought up against breaches of laws that cannot be conceived to be broken. Sometimes, indeed, imagination comes to the very limit of breaking this condition. Naturally enough, we find an example in the writings of a man steeped in lore that demands the conscious application of the Laws of Thought as Thought. When Dr. Dodgson, professional mathematician as he was, turned himself into Lewis Carroll and produced *Alice in Wonderland,* he skipped along the borders of the impossible in thought and created a land in which imagination had its maximum of latitude. If anyone wants to know what the outermost post of imagination looks like, let him join Alice in gazing Through the Looking Glass. There he will find a reconstructed universe that is just on the point of toppling over into sheer meaninglessness. The connections between ideas are almost, but not quite, lost. Just enough connection is left to keep up a precarious cohesion in the Alician world. The slightest additional turn of the screw of absurdity and the whole structure would crash.

From this lowest level up to the most carefully reasoned out Utopia the world of artistic imagination marks a regular gradation of increasing limitations to the freedom of imagination. When inexperienced writers sit down to write a novel they usually have the impression that what they need most in their enterprise is imagination. But as their work proceeds they find themselves, as we saw in Chapter VII, being continually pulled up, not by lack of imagination, but by lack of knowledge. There we treated the matter from the point of view of acquired knowledge, now we have to approach the problem from the standpoint of imagination.

Take the case of a brilliant young graduate who has made English literature his main study, has, in the university phrase, "majored in English," and now sits down to produce his novel. His first feeling is one of perfect freedom. He can put down what he likes; he is no longer trammelled by academic conditions. He can create any sort of characters he likes, and he can make them do precisely what he pleases. He is not responsible for the opinions his puppets express, nor for the mistakes they may make socially or otherwise. It is only when he, the author, writes in his own person that he can be held responsible, and he thinks that he can so arrange matters that his characters shall bear the full brunt of all possible errors. But as the work proceeds he finds all manner of difficulties taking their place at his door. He does not know the colour of the envelope of a telegram in France, he wonders how exactly to describe the sound made by the closing of a trapdoor, he has to hunt up an old almanac to discover which day of the week the 14th of February was in the year 1869. Of course he soon learns how to avoid problems of this sort. The artist has a name, *evasion,* to indicate the process of presenting a scene or a person in such a way as not to show up ignorance of some actual fact. If, for example, he cannot remember whether in walking an elephant moves his legs like a horse or moves both legs on one side at the same time, as it really does, he contrives to present the elephant in front view where his ignorance cannot lead to a detectable error.

SCIENTIFIC IMAGINATION

All this obviously leads up to the scientific field for the exercise of imagination. To begin with, we must break down the popular belief that imagination and science stand opposed to one another. We have got so accustomed to associate imagination with the fine arts that we lose sight of the fact that imagination plays a prominent part in scientific investigation. In point of fact, it would not be very far from the truth to say that science is "of imagination all compact." Take even the most unpromising field of arithmetic. One would think that arithmetic and imagination belonged to different worlds. Yet in working out arithmetical problems we find that we are all the time "imagining cases," and in other ways using the busy faculty. To frame an hypothesis sounds much more learned than to imagine a case, but the two are to all intents and purposes the same. Can we picture anyone making more use of imagination than Einstein when developing his exasperating theory? It is difficult to get the plain man to realize that there is as much imagination in the planning of a bridge over a canyon in the Rockies as in writing an epic. The trouble is that tradition has captured imagination as the attendant-in-chief of the Muses. When Akenside can, without protest, write his poem on the "Pleasures of the Imagination," in which there is no mention of the invention of the steam engine, to say nothing of the scientific marvels of his day, it is easy to understand how completely the fine arts have captured imagination and made it their own.

Psychologically, imagination is the same whether it is exemplified in the invention of wireless telegraphy or in the creation of the gorgeousness of "Kubla Khan." In crossing the street in these dangerous automobile days we have to note the state of affairs just as we step off the curb, and imagine the state of affairs by the time we reach the middle of the street, and also by the time we are to be close to the opposite curb. So much experience do we have in this sort of motor exercise of imagination, and its application to the ordinary affairs of life, that we are beginning to extend the range of the application of the word and what it implies. It is beginning to be used in quite ordinary speech and in connection with very practical matters. Nowhere, in fact, does the American tendency of to-day to introduce psychological terms into ordinary speech show itself more markedly than in connection with imagination. It is being released from its old isolation on and around Parnassus and is now coming into its own—word and thing—in the ordinary affairs of life, particularly in the departments of economics and salesmanship. So we may now regard the matter from the practical side, as found in real life.

The essence of imagination from this point of view is the mental construction of a state of affairs that will meet certain needs. The question may be profitably raised whether there must be an actual picture of this state of affairs, whether, in fact, imagination must always live up to the derivation of its name, which certainly suggests a graphic presentation. In other words, the problem rises whether imagination always implies some form of image. Is there any difference, in fact, between *imaging* and *imagining*. As a matter of experience, the verb *image* is practically not used outside of psychological classrooms and laboratories. When we use the term "to image" we imply just the reproducing by mental images of what has already existed in our experience. In the series *sencept, percept, image, generalized image, concept,* the second and third terms are the materials of imaging. We recall the images as accurately as we can and then build them up into a whole in which they have, as nearly as we can recall it, the same relation to one another as they had when we observed the whole situation of which they formed part. This process is really a sort of pictorial memory, and there are people who do most of their thinking by this means. We have here a borderland between memory and imagination. So long as we confine ourselves to recalling elements and reconstructing them into previously existing wholes, we are limited to memory. But if we proceed to draw conclusions about the future relations of these elements we have recalled, we have passed into the realm of imagination.

When the actual images, however, are essential to the carrying on of thought, we are dealing with a comparatively low form of imagination. This is sometimes called pictorial thinking, and many philosophers cannot speak peaceably about this aided form of thinking. Dr. Hutchison Stirling we found to be severe in his condemnation of thinking by means of images. He says it is not thinking at all, but merely a wasting of time with empty pictures. One can fancy him sneering at it as "thinking on crutches." Paul Souriau, in his *Suggestion in Art,* tells us that it is a great mistake to say that picturing is not reasoning. "There is nothing more enlightening," he tells us, "than certain images. One is sure of having an idea that is truly intelligible when one is able actually to conceive it, that is to say, bring it back to an intuition or a representation." Herbert Spencer goes further and practically maintains that we do most of our thinking by means of images:

> As we do not think in generals but in particulars—as, whenever any class of things is referred to, we represent it to ourselves by calling to mind individual examples of it. . . .

Spencer is obviously referring to what we have called *generalized images.* Most of us have a good supply of these. If we are asked to "imagine a cow" we know that the command really means to "image a cow," and we call up a mental picture of a cow. With such a familiar subject it may happen that we recall the picture of one particular cow that we know, or knew, in real life, a certain *Blossom,* or *Prussie,* whom we have known personally, as it were. This is not really a generalized image, but the image of an actual cow generalized. If, on the other hand, we are asked to "image a giraffe," the chances are that we have no intimate acquaintance with one individual giraffe, so we make a generalized picture from all the giraffes and pictures of giraffes that have at any time entered into our experience. This is a genuine generalized image, and can be called upon at any time. The ordinary rule is that we have a selection of generalized images on hand for use when occasion arises, and these generalized images are practically unchanged throughout life. When called upon to deal with giraffes in thought or speech it is always the same old giraffe that comes up into consciousness. It is true that circumstances may arise from time to time that may result in new relations with the originals of some of our generalized images, and then a certain change in them may follow. After a visit to an ostrich farm, for example, our generalized image of these creatures may have to undergo alterations and repairs.

In all this it will be noted that we are dealing rather with the materials of thought than with thought itself. Imaging is a process of gathering together material on which the psyche can act. Imagining, then, is more than this mere collection of images and implies the arrangement of such material so that a given situation may be anticipated and prepared for in the most advantageous way.

IMAGE EXPLAINED

But before going any further we must get rid of one limitation imposed upon us by the line we have been following. The very word *image* has a tendency to limit imagination to the sphere of one only of the gateways of knowledge. When we look into the matter we find that a great many people, without having thought about the matter at all, have the general impression that imagination implies a sort of picturing out of situations, and then setting about getting means to put right certain defects shown up in these pictures. Now very often this notion of picturing out does fit into the use of the imagination on the practical plane. A general, for example, in planning his attack on the enemy does just this thing. But we must not limit imagination to one of the senses. The visiles have no monopoly of the process suggested by that name. Its function is to cause us to throw ourselves forward into a set of circumstances the elements of which we know will be there whether we will or no, and so manipulate these circumstances in our consciousness as to produce a combination that will lead to results of which we will approve. These circumstances may include contributions from all the senses, so in order to give freedom of expression the term *image* should be extended in its application so as to include reproductions of the units of other senses besides sight. The smell of a cigar, the flavour of a sauce, the cold smooth feel of a piece of silk, the sound of C-natural on the piano are all as much entitled to rank as images in the psyche as the long neck of a giraffe.

The essence of imagination is this process of projection into the future, discovering what elements are available, and finding the best way of manipulating them to the will of the psyche concerned. Very often the mistake is made of concentrating on the material involved instead of on the use made of the material. Occasionally an author is accused of plagiarism because he uses the same material as some author who has preceded him. But the vital point in what is called an imaginative work is not the material actually used, but the way in which that material is worked up. Take the simple case of the window dresser. One man may arrange the materials in the window in such a way as to produce almost no effect whatever on the passer-by. Another may come along and by a mere rearrangement of the material already there produce what is called an attractive display. When the second man came along he took in the whole effect, and by projecting all the available elements into a new combination produced a totally different impression. No doubt principles have been laid down to guide in the process, and a knowledge of these principles may aid the window dresser in in his work, but these principles themselves are drawn from the experience of those who, having a natural gift of imagination in this department, by experimenting have discovered the most satisfactory ways of producing the desired result. In literature, as in window dressing, often a very slight change in the presentation of the available matter may make a marvellous difference in the effect, and the power to anticipate the effect this change will produce is an example of the manipulation of imagination, and may be graded as to merit in any part of a scale that ranges from slight mechanical skill up to genius.

CHAPTER XV

RUDDERLESS EXPERIENCE

Freud's Wish Theory—The Censor—Daydreams—Appreciation and Reverie

We have discovered already what a troublesome thing consciousness is, even when under control and kept to its proper channels; but when it takes to itself the wings of the morning and ceases to obey any rules except those of its own making, it becomes a terror. There are those who are afraid to go to bed at night because they know that they are liable to become outcasts on a desert isle of experience where consciousness runs riot and the laws of common sense are no longer valid.

For we have to realize that in dreamland we are still conscious, though we have lost the control that makes consciousness tolerable. The enemies of consciousness, the epiphenomenalists, welcome the recognition of this lawless province and use it as a means of keeping down our self-esteem and of preventing us from thinking more highly of ourselves than we ought to think. Consciousness in itself, they like to point out, is nothing so grand after all, for the consciousness in dreams is as much consciousness as it is in our waking moments, and yet see where it lands us! What a poor physiological by-product it is, after all!

Those who take consciousness seriously are not willing to throw it over because of those lawless outbreaks that we call dreams. A very obvious line of defense is to deny their lawlessness and to maintain that they too have laws of their own, and that they look grotesque to us only because we have not discovered these laws. It is even maintained that the laws of dream activities are so fundamental that by a study of them we may be able to throw light upon what goes on in the light-of-day consciousness of which we are so proud.

The study of dreams is no new thing; we find them treated more or less seriously from the most ancient times. Naturally, a considerable amount of mysticism and a vast amount of superstition have been involved in the old-fashioned treatment of dreams; and it is only fitting that the explanation of dreams to-day should take on at least a quasi-scientific aspect. Though the psycho-analysts claim the unconscious as their special realm, they make no bones about using dreams as very valuable material to aid them in their investigations into the processes that go on in the unconscious. The arch psycho-analyst himself devotes his chief book to a treatment of dreams and their meaning.

FREUD'S WISH THEORY

Dr. Sigmund Freud made up his mind long ago that all our dreams are merely our endeavour to obtain a factitious satisfaction of our thwarted desires. Every dream, he maintains, is the psychic reconstruction of events in such a way as to gratify a wish. Things do not go in the real world in the way we would like them to go, so we put matters right in dreamland, where we are free from the regrettable restrictions imposed upon us by that disagreeable complex commonly called "the nature of things." Or at any rate dreamland is *nearly* free from troublesome restrictions; for there is left an annoying inhibiting force with which we must reckon. But even that, as we shall see, may be manipulated by a skilful dreamer in a way that is not at all applicable to the hard facts of life.

Still, this wish-theory bristles with difficulties. We dream that some dear one is dead and turn reproachfully to the Freudian and ask if he calls that the fulfilment of an ungratified wish. He explains, courteously enough, that he does not believe that at the present moment, or indeed at the vast majority of moments, you desire the removal of your dear one; but he asks significantly: "Was there never a time when you would have welcomed the passing of this dear one?" He admits that the dear one in question is at present—and indeed on most occasions—the apple of your eye. But he wants to know whether occasions do not arise when you feel that a demise would be a relief. When such matters are put before us we cannot always get up as vigorous a protest as we feel we ought to.

A happier line of defense is to ask the psycho-analyst whether he regards as the realization of an ungratified wish those ghastly dreams that we have seen send us wandering about in polite society in negative clothing, or set us chasing an inexorably speeding train that we want to catch. Here the psycho-analyst is inclined to dismiss the whole dream as a palpable absurdity, having no relation to real human affairs, or to fall back upon symbolism and supply an ingenious explanation based on various levels of analogy. Usually, however, the psycho-analyst does his best work in dealing with dream incidents that use the material of our ordinary life. Even here, however, we may try without success to trip him up.

A doctor dreams in the most sympathetic way about another doctor of his acquaintance who in dreamland makes a serious mistake in his diagnosis and is exposed to severe public criticism. In the dream the dreamer is full of respect for his unfortunate colleague, in fact, much more full of respect than during waking hours. The Freudian maintains that this is a clear case of the fulfilment of the dreamer's desire to see his rival humiliated. We naturally argue that if this were so the dream would have failed in its full purpose; and we might go on to ask: What about the respect that the dreamer felt for his colleague? Would it not have been a much more satisfactory fulfilment of the wish if we could dream of our rival being caught out in his blunder in such a way that we could openly gloat over him? The Freudian admits the surface plausibility of our argument but explains that in dreaming a certain reserve is necessary, if we are to have our wishes gratified at all.

THE CENSOR

Even in our waking life most of us cannot quite enjoy a picture we ourselves paint of our rival in ignominious circumstances. We feel that it is not playing the game. There are people, it is true, of such a mean nature that they can enjoy the making of such pictures and can gloat over them when made. For such people real satisfaction in a dream is to be had only when things are carried to the extreme, and the disagreeable picture is painted in the plainest colours. But with most of us there is some degree of good feeling that prevents us from gloating grossly over our fallen enemies. To the vast majority of us there is a sympathetic significance in Browning's line:

"Nay, but there's a decency required!" quoth she.

It is this "decency" that prevents us from enjoying the crude picture of our rival's humiliation, or similar pictures of the satisfaction of our grosser sensual desires. This restraint on our freedom of working-up dreams is the inhibition to which we referred above, and the psychologist must set about explaining it. Since Freud has made rather a specialty of dreams, it is only natural to put him on the witness stand and ask him what he has to say for himself. No sooner has he raised his hand and made the customary declaration than he enters on an exposition that shows him up in a much pleasanter light than usual. We have become so accustomed to his lurid pictures of the contents of the *unc* that we are delighted to find that there is another side to his presentation of human nature. This inhibiting force we have seen appears to be on the side of the angels, and exercises its veto against things that the angels do not see their way to approve. But with a mental content made up of so much that moralists cannot tolerate we naturally wonder whence comes this opposition to the admission of certain elements into our psychic experience. When we press our witness on the stand he finds a certain difficulty in making us understand his position, so he falls back, as all psychologists must sooner or later if we press them long enough, upon a metaphor, and introduces to our notice a certain mythical but useful personality that he calls the *censor*.

Whence this *dramatis persona* comes, and what is his exact standing in the psychological play are questions to which it is hard to find satisfactory answers, but it may be at least admitted cheerfully that he is a very useful person, who helps us greatly in our attempt to explain the interactions that mark the moral struggle that is always going on within the psyche, whether in the consciousness or in the *unc.*

The truth seems to be that this censor is the personification of what is often called our "better self." The very phrase at once puts us on our guard, for we have let it sink deep into our mind that the ego is one and indivisible, and it would appear that here we have an insidious attempt to introduce a split. But if Freud were allowed to explain matters he would no doubt make it clear that his censor is not a separate personality introduced into the psyche, but merely an aspect of the psyche that it is convenient to express in this way in order to aid in clear exposition.

Another misunderstanding about this censor has to be removed. All this talk about angels and morality may have conveyed the impression that the censor is incorrigibly moral in the popular sense of that term; that he is in fact priggish. But the censor is not moral in that lofty way; he represents merely conventional morality, the essence of the opinion of the society in which the psyche moves. We are often inhibited, when the notion of doing a certain thing comes into our consciousness, by a vague feeling of uneasiness, which, on analysis, can be traced to this sense of social disapproval. To the censor is allocated the work of bringing prominently forward this social veto. As a result of education and experience, and particularly by the reaction between the individual and his environment, certain thoughts and actions are frowned upon. Certain things, as the English social slang phrase expresses it, "are not done," and certain thoughts are not expressed. Taking the ordinary decent member of society, we find him now and again tempted to do these things and think these thoughts, but he is always troubled about them. Truth to tell, now and again a time arrives in the experience of an individual when he no longer feels uneasy about them. He has reached that stage described by the clergyman when he preaches from the depressing text: "Ephraim is joined to his idols; let him alone." When this stage has been reached the censor ceases from troubling, and the sinner goes on his way in more or less comfort.

But till this stage has been reached the censor is busy the whole of his time, keeping down below the threshold all the concepts that are objectionable to him. The result is that the heart of man, which we are told on excellent authority is "deceitful above all things," sometimes finds it desirable to camouflage certain concepts so as to induce the censor to let them pass. A man wants a drink because he likes a drink; but he explains to the censor that he is afraid of catching a cold from exposure to that draught from the door, and in any case he suggests that prevention is better than cure. In real life we sometimes succeed in deceiving the censor, but very often we only half succeed.

We need not wonder at this, since we have to realize that the censor is only our self under a different name. The wonder is that the alias so often seems to defy our penetration. Taking up the attitude we have adopted in this book, we would have no standing at all if we started finding fault with Freud's figure as a means of exposition; but there can be nothing save good in examining it for a little and trying to find out all that it implies.

The general idea of the figure is that the censor is on duty all the time, whether we are sleeping or waking. But Freud makes enough allowance for the real nature of the censor to admit that our better self, acting as our censor, is not quite so keen during sleep as when the whole psyche is awake and alert. But somehow the censor is assumed to be not so deeply asleep as is the rest of the psyche. It is not made clear why this particular aspect of the psyche should do with less sleep than the rest. But Freud would no doubt explain that the censor embodies the most fundamental part of the psyche—the real psyche, in fact, the psyche that embodies the spirit of the social plane in which he lives. Even orthodox psychologists tell us that in sleep the psyche is not so uniformly asleep as the ordinary person supposes. Certain of its facets are more open to stimulus than are others, and all that Freud has to do is to claim that this aspect represented by the censor—the sensitiveness to social approval or disapproval—ranks among the lightest slumbering elements in the make-up of the psyche. Mark Twain's "Admonition" lends colour to this suggestion, so we may grant to the censor the quality of a particularly light sleep.

All the same, we must give the poor fellow some degree of sleep during his daily twenty-four hours' vigil. He must be allowed a certain amount of slackness when the rest of the psyche is in deep sleep, and therefore, for the time being, less likely to get into mischief. In this state it is natural that some objectionable matter should "get by" the censor. In plain daylight, when he is wide awake and alert, it is difficult to deceive him, but in the somnolent state when the psyche is busy in dreamland it is possible to throw dust in his eyes and smuggle through ideas and concepts that would in his more alert moments be at once caught and turned back.

In order to get our dreams past the censor, then, we must modify them in such a way as to deceive him into believing them harmless and respectable; but Freud assures us that if we can but analyze them aright they will always be found to embody a wish, reputable or otherwise, usually otherwise. The ingenuity he and his followers expend on the work of analysis is so amazing that it rouses the profoundest doubts in the minds of those who interest themselves in these matters. Can it be possible, we ask ourselves, that we are such terribly deep persons as all this makes us out to be? No doubt on the frail human side we are rather flattered at the implied complexity of our psychic processes, but that aspect of us that is given over to logic and science and such matters is not happy about the whole scheme of wish fulfilment in dreamland.

It is true that there are pleasant, plain-sailing dreams that are obviously the fulfilment of our wishes. Often we wake up in the middle of such a dream and do our futile best to fall asleep again quickly, so as to "continue in our next" the glorious tale that we would fain make a serial. It is the dream that is distorted for the benefit of the censor that gives rise to skepticism. Yet there is a class of dreams that appear to satisfy in every case the Freudian demand. Daydreaming owes all its charm to its power of giving, on the dream plane, immediate effect to our wishes. Tired out with the continual rebuffs resulting from the nature of things in what is called real life, the psyche deliberately withdraws itself within its own borders and makes an ideal reconstruction of things as it wishes them to be. We have all done this sort of thing, and as a rule have experienced little difficulty either in starting the process or in keeping it up.

We are naturally a little curious about the status of the censor here. Why does he not interfere? Freud tells us that he is thoroughly alert, during our waking times, and that it is only during the hours of sleep that he so far loses his keenness as to be imposed upon by the distortions that afterward give the psycho-analyst such trouble to interpret. But underlying all that we have said about the censor is the assumption that his function is a moral one. So strong is the tendency to make him a moralist that many people who read Freud are inclined to ask him how his censor differs from the older unpersonified concept of *conscience*. The answer is that the Freudian concept of the censor does not necessarily involve moral evaluation at all. The censor's business is to see that certain acts, modes of thought, points of view, and what not, are duly respected. He represents the paid-up capital of experience of the psyche concerned. A hypocrite, for example, living with religious people must depend upon his censor to keep him from saying and doing things that are out of keeping with his environment. So in speaking a foreign language we give the censor the work of inhibiting our irritating tendency to employ words and constructions alien to the speech we are using. In this view the censor has obviously a function to perform in daydreaming.

DAYDREAMS

To begin with, he may be a little concerned on the moral side; for though his work is not exclusively moral he is not precluded from dealing with morality. He may object, for example, to daydreaming as a whole, and regard it as a demoralizing habit. Strengthened by the disapprobation of teachers and parents, he may do his best to inhibit the whole process. But even when the paid-up capital in thought and experience of the person concerned is sufficiently great to overpower the inhibition and then set up a daydream, the censor has still functions to perform. His business now is to keep the train of ideas within the bounds of possibility. He would probably prefer to keep to the still stricter limits of probability, but such restraint would spoil the daydream for most people, though the highest kinds of daydreams are those that infringe least on probability. For a little self-examination will show that we never really enjoy a daydream that is quite divorced from probability.

In order that a daydream may give its full flavour there must be means and ends, difficulties and surmountings of difficulties. No doubt the difficulties must be surmounted with all speed, and with the minimum amount of effort. Things are expected to fit in easily, coincidence must be worked for all it is worth, everything must be reached by easy short cuts. But if there is to be real enjoyment a *process* of some kind there must be. Thus at the very beginning the censor gets his hand in. He does not allow us to start too high. We must begin somewhere not very far removed from the point at which we actually stand in real life. The girl who starts her daydream by being a princess straightway spoils her chance of the higher delights. Her censor is clearly not doing his duty. The period between princesshood and happy-ever-afterward is apt in these circumstances to be unduly foreshortened, and the dream comes to an uneasy end in the vagueness of uneventful enjoyment of life.

Anthony Trollope is a fitting witness to be called here. Seldom do we find such a perfect balance of imagination and common sense. In his *Autobiography* we have a passage in which he speaks quite candidly of his own attitude toward daydreaming at a time when he was a civil service clerk at a salary of four hundred and fifty dollars a year. He characteristically confined his daydreaming within definite limits, binding himself down

> to certain laws, in certain proportions, priorities, and unities. Nothing impossible was ever introduced—nor even anything which, from outward circumstances, would seem to be violently improbable. I myself

> was of course my own hero. Such is the necessity of castle-building. But I never became a king or a duke—much less, when my height and personal appearance were fixed, could I be an Antinous, or six feet high. I was never a learned man or a philosopher. But I was a very clever person, and beautiful young women used to be fond of me. And I strove to be kind of heart and open of hand, and noble in thought, despising mean things; and altogether I was a very much better fellow than I have ever succeeded in being since. . . . I learnt in this way to maintain an interest in a fictitious story, to dwell on a work created by my own imagination, and to live in a world altogether outside the world of my own material life. In after years I have done the same— with this difference: that I have discarded the hero of my early dreams, and have been able to lay my own identity aside.

It will be seen that the novelist presents a somewhat special case in this matter of daydreaming. There is a sort of professional advantage to be gained from this form of imaginative work, and the last sentence indicates that Trollope felt that he had gained a sort of detachment from himself that enabled him to work more accurately in interpreting other characters by comparison with his own. We can fancy that in the case of a novelist or a psychologist the censor might find his work extraordinarily difficult. But in the case of ordinary people he will not find this double pull. If we had any influence over the censor we might well exercise it in the way of directing his attention to one special aspect of his controlling the daydreaming of ordinary persons, particularly those who are still young. He should make it his business to introduce as many processes as possible in the course of the daydream, and to secure that in these processes due attention is paid to the nature of things so far as that nature is not modified by dream conditions.

The censor's work here may be well illustrated by what he does in other departments of life. Novel writing is not far removed from daydreaming, and in the writing of novels authors depend greatly upon the censor. He must carefully scrutinize the assumptions of the plot, and throughout its development must be on the watch for anything that is inconsistent with these assumptions.

In the grotesque novel we have the nearest approach to daydreaming. When Jules Verne, H. G. Wells, Fred Anstey, or

Frank Stockton start on a fanciful tale they make certain assumptions, unwarrantable assumptions. These the censor does not like, and so far as these assumptions are concerned he has to be bludgeoned into accepting them. But once they are accepted the censor is within his rights in insisting upon their being consistently maintained; and it should not be forgotten that in thus insisting he is working in the novelists' interests. It will be observed that the best novelists of this type are scrupulously careful to abide by the assumptions they have made and to see that in all matters outside the assumptions claimed the ordinary laws of nature are studiously followed. When, for example, Mr. Wells in *The Invisible Man* brushed aside the censor's remonstrance against the possibility of a man becoming invisible by the use of a potent mixture evolved by modern science, he is extremely careful to make that which follows conform strictly to all the other laws of nature. As an instance, take the case of the invisible man swallowing food. Since the food does not instantaneously get assimilated and thus form a part of the organism of the man, it remains visible, only gradually disappearing as it is digested. In Fred Anstey's *Vice Versa* the ridiculous assumption is made that a certain Indian stone has the power of enabling two psyches to change bodies, and thus an unfortunate father is made to change bodies with his schoolboy son and is accordingly sent off to school in the son's place, there to undergo the most exasperating experiences. But once the catastrophe has taken place, everything is conducted with the most scrupulous attention to all the ordinary laws of God and man.

So with our daydreams. The censor's work must be thorough, if these are to be justified. But the preliminary question has to be faced about that initial bludgeoning of the censor before the dream begins. Is it ever legitimate so to set aside the conditions of reality as to make daydreaming possible? There are those who are very firm on this point. They maintain that all stuff-and-nonsense of this kind only unsettles children's minds, and makes them incapable of doing their proper work in this exceedingly practical world of ours. We have seen that Dr.

Maria Montessori will not even allow children to enjoy the passive aspect of daydreaming represented by fairy tales, and if the mere listening to impossible-aspect adventures is condemned, how much more objectionable is the offense of actually making up such fantasies on our own account. Children must not be told anything that is not actually true, and by true Dr. Montessori obviously means literally true. People who write in this strain take no account of artistic truth, they stick to what they call scientific truth, and Dr. Montessori is always proclaiming how scientific she is.

The fact is that the antithesis of truth and fable in the Wordsworthian couplet quoted in our last chapter may well be challenged, for quite a good case may be made out for the moral truth underlying this form of figurative teaching. Indeed, if the stickler for literal truth happens to be a Christian religious person we can put him in a very awkward position by bringing forward the parables of Our Lord, though probably it would be more generous to sacrifice this controversial advantage and, taking higher ground, maintain that it is impossible to avoid daydreaming in the course of ordinary life. So far from being unpractical, certain forms of daydreaming are in the direct line of truth discovery. In full view of the rejection of the demand for scientific truth as opposed to fable or other imaginative work, we may point out that all our scientific speculation is a sort of daydreaming. Most hypotheses owe their birth to the imagining of a state of affairs different from that which exists and with which we are familiar. False hypotheses are merely daydreams that, from the practical person's point of view, have taken a wrong turning; whereas those that have ended auspiciously were never really daydreams at all, since they represent what was true. But, obviously, all this is special pleading and introduces elements that are not quite germane to our subject, so we had better turn back to our real problem, and accepting the Freudian view that the daydream is an attempt on the psychic plane to satisfy some ordinary human wish, consider whether it can be approved. The conclusion forced upon us is that *under certain conditions* the daydream may be justified.

The first condition to be laid down is that the dream must include processes as well as results. A dream that is merely a series of pictures of ends attained, with no record of means or efforts, is one to be avoided. It exhausts all the energies of the dreamer in the mere enjoyment of the pictures he has created. It is no more than gloating. The reference to pictures passively enjoyed inevitably recalls the cinema that popular usage has labelled with the significant title "the pictures." In a very direct way the popularity of "the pictures" may be used as an illustration, almost a proof, of the Freudian wish-theory. Why do people steadily flock to halls where they see incidents that are obviously impossible in the course of real life? The answer is, because they see in these impossible situations what they would like to see in real life, and particularly because they are able in the privacy of their personal experience to put themselves in the place of the screen heroes and heroines who rouse their admiration. The spectator knows perfectly well that the incidents are grotesquely impossible without the behind-the-scenes aid supplied while the reels are being prepared. But they let themselves go and are willing to be imposed upon, just as we all are when we give ourselves up to the enjoyment of a novel. In criticizing the use of fables as a means of moral instruction, we have seen that Rousseau finds serious fault with the impossibilities inherent in the fable narratives but admits that under certain conditions it may be permissible to let ourselves be carried away by the genius of a writer.

But at the cinema these artistic restraints are not called into play, and we have a case of mere gloating, aggravated by an unwholesome egocentric reference. Fortunately, this gross gloating, pleasant as it is to dispositions of a certain indolent type, does not give the same solid satisfaction as comes from that form of daydreaming that includes processes as well as results. The contrast between the actual and the ideal is more enjoyed when there is an effort to bridge the gulf between them. From the *Arabian Nights* take the case of Alnaschar, with its blatant moral. You remember how he sits in the bazaar with his glassware around him and imagines how he will sell all this at a good profit and then buy more of a finer quality which he will in turn sell at a still better profit, and so on, till in his rapid rise in the social scale he reaches a stage at which he can without sin make eyes at the caliph's daughter and overcome the competition of a hated rival. Finally he reaches such a high level of matrimonial dignity as induces him to assert himself by a vigorous kick that at one blow disposes of his dreamland glory and his real-life stock-in-trade. Had Alnaschar started straight away on the caliph-circle level he would have got sooner to work, but his enjoyment would not have been nearly so keen. There had to be steps—handsomely abbreviated, no doubt, but still steps—between his present obscurity and his dreamland glory; otherwise that glory would have lost a good deal of its splendour. What the moralist objects to in daydreaming is the lotus-eating attitude it tends to induce, and so far as the static variety of daydreaming is concerned, the objection is justified. Coleridge is credited with saying that his ideal of bliss was lying on a sofa reading novels. People who share this view may have nothing to say against the passive enjoyment of the daydream; but most other people have. What is wanted is a kind of daydreaming that is in its very essence active and is likely to lead to further activity outside of dreamland.

The moralist is often not a little unfair in dealing with this matter. He adopts a heads-I-win-tails-you-lose attitude. If the dream leads to nothing it is bad; if it does lead to anything then, of course, it was not a daydream at all. When Warren Hastings as a boy of seven "lay on the banks of the rivulet which flows through the old domain of his house to join the Isis," and dreamed that he would go afield, and make his fortune, and come back, and become, like his forbears, Hastings of Daylesford, he was daydreaming. That he actually brought to pass much of which he had dreamed does not in any way alter the fact that it was dreaming. A daydream that includes processes as well as results is a thing to be fostered.

When in the old days the commander of a ship of war recommended his midshipmen to imagine during their lonely watches all sorts of things happening to the ship, and to imagine also how to deal with them, he was really inviting them to daydream, only the dreams were to include practical applications. No doubt these seafaring young gentlemen would imagine many ingenious but not very practicable plans, and it would be the business of the censor to do what he could to suggest and emphasize the special difficulties in each case. No doubt also the midshipmen would too often neglect the censor's cautions and content themselves with enjoying in luxurious self-complacency the contemplation of the admirable results they had attained by easy imaginative methods. The cinema state of mind is thus of respectable antiquity. Yet it has to be admitted that the commander was justified in his recommendation. At the worst the youngsters familiarized themselves with the conditions of the problems they were likely to be called upon to face. They prepared a suitable mental content, and, above all, they prepared it in dynamic connections.

APPRECIATION AND REVERIE

Quite a practical problem rises here in connection with the reading of certain kinds of poetry. How far is the reader of such poetry a daydreamer? Some schoolteachers are here rather inconsistent. They are severe against daydreaming and yet do their very best to encourage the reading of all sorts of poetry—some of these sorts necessarily involving a state of mind exactly like that produced by daydreaming. Teachers of literature in these latter days are making heroic efforts to get their pupils to respond to the stimulus of the poet. People are beginning to discriminate for educational purposes between the active poet, the one who writes poetry, and the passive poet, the one who reads and enjoys what the other has written. The aim of the teacher of literature is really to make as many passive poets out of his pupils as their capacity will permit. *Appreciation* is the technical name for this new form of teaching, and books have been published on the subject. Its essence is to be found in the placing of the reader in the same position as the writer when he experienced what he sets forth in his work: its aim is to enable the reader to live through at second hand the experience of the writer. To follow the poet in this way is in many cases to dream again the dreams he has dreamed. We need a word to express this re-dreaming, and we can imagine a "pure pedantic schoolmaster" of the German type inventing a new transitive verb *post-dreaming,* meaning to dream after another, and introducing into school an exercise called *post-dream-drill.*

For us at present the important point is whether there is not more danger in this appreciative after-dreaming than in the roundly condemned daydreaming. When the literature teacher has had his will and has reduced most of his class to a drowsy-eyed re-dreaming of the glorious dreams of the poet, are not the pupils in a parlous state? Are they not merely enjoying passively the beauties lent them by the poet, and to that extent becoming less fit for the real work of life? Probably if John Locke could be called back to give his opinion he would vote against the poet here, and even Plato would not be a safe witness to call on the poet's side. But, fortunately, even practical common-sense people to-day do not take such a pessimistic view of poetry. The world has reached that stage at which we believe it possible to enjoy poetry in moderation without losing touch with the realities of life.

Indeed, there is a difference between the state of the passive poets and the daydreamers. Both, no doubt, enjoy passively the dream life that is carried on in the psyche. There is a stronger personal element in daydreaming than in the passive enjoyment of poetry. No doubt the German authorities on æsthetics, with their distinction between *Einfühlung* and *Einsfühlung* (which God forbid that I should attempt to explain here), emphasize the thrusting of the reader's personality into the matter that the poet presents to him. But there is a world of difference between thrusting oneself into an environment already created by the poet and creating an environment for ourselves. Here the Freudian conception of the dream as fulfilment of a wish provides a clear demarcation between the two enjoyments. The passive poet may enjoy his experiences in the environment provided for him and return unimpaired to the hard facts of life.

He has been living in another world and comes back refreshed. The daydreamer coming back from a world differentiated by himself from that of daily life may come back either refreshed or dispirited, according to the kind of differentiation produced. Psychologists now recognize a necessary connection between emotion and a corresponding activity. An emotion that expends itself upon itself may perhaps be permitted as an occasional relaxation; but wherever possible an emotion should be made to lead to some activity correlated with it. A wise arrangement of our emotional life is to confine the passive enjoyment to states produced by the reading of the poetry supplied by others, and to have in every case of daydreaming an active element.

There is, however, a process of activity among the concepts that can be included under neither the passive enjoyment of the poetry of others nor under the heading daydreaming. Still less can it be classed as thinking. This is what is often called *reverie*. It has a certain affinity with daydreaming, but differs from it in the fundamental point that it does not imply direction of any kind. The psyche throws the reins on the neck of the steed Imagination and lets it wander at its will. When we want to speak disparagingly of this process we do not dignify it with the rather respectable, almost philosophical, name of *reverie,* but call it *woolgathering.* If in a modern market place a customer approaches a stall and finds the merchant not quite asleep but obviously not interested in what is going on around him, the natural description would be that So-and-So was woolgathering. It may be that this successor of Alnaschar was in the midst of a daydream, but more likely the rougher term is the correct one. It requires less energy to indulge in reverie than in daydreaming. No doubt there is a corresponding lowering of the tone of the enjoyment. Reverie is pleasant in a mild way because there is release from all responsibility; there is no need to exercise control. In daydreaming the psyche must be always at the helm. No doubt the seas are calm and the sky bright. There are no rocks ahead. Things are guaranteed to go smoothly. But there are continual comparison and contrast; about all there is a steady demand for choice between alternatives. In reverie, on the other hand, the concepts appear to work without any help from the psyche who stands placidly aloof and declines all responsibility.

If chance will have me king, why, chance may crown me,
Without my stir.

What, then, is the difference between reverie and real sleep-dreaming? In both cases the ideas seem to take the bit between the teeth and form whatever combinations they see fit. The difference lies in the fact that, while in both cases the psyche looks on, in the sleep-dream it is a helpless spectator, in reverie it has the power of veto. In a disagreeable dream, when we find ourselves in a ghastly situation we have no means of escape; whereas in a reverie, if our thoughts take a wrong turning we at once rouse ourselves and give them a new direction. Very often in our dreams we would willingly buy at a great price the power of waking ourselves so as to get at the wheel again and give our ideas the proper orientation.

The situation may be thus summed up. In thinking the psyche takes things in hand and dominates the whole process, though things are going on in the *unc* over which the psyche has no *direct* control. In ordinary sleep-dreaming the psyche has no control at all. In daydreaming the psyche once more takes the wheel and keeps on directing the process. In reverie the psyche merely sits beside the wheel, which it does not touch unless something untoward happens which demands redirection.

CHAPTER XVI

EMOTIONS: PSYCHIC OVERFLOW

The "Boiling-over" Theory—The Lange-James Theory—On Regulating the Emotions—The Lists of Descartes and McDougall—Instincts and Emotions

A CHEERLESS picture of the future represents the fully developed man as bald, toothless, and free from all emotion. The loss of teeth and hair does not concern us here, but the disappearance of the emotions has a very direct bearing on our present interest. Hair has always been a source of trouble, and women have now met that trouble halfway by bobbing, which is really a compromise between baldness and the luxuriant tresses that used to take so much time and attention; teeth have been a perennial source of trouble in human life from the infantile stage named after them up to the period that Shakespeare labelled "sans teeth." Emotions, however, have not up till quite recent times been regarded as merely troublesome—they have been credited with some advantages. Indeed, in spite of the views of certain psychologists, they are still regarded by the general public as having at least some good points that counterbalance the disadvantages that philosophers have been at pains to expose.

The cold, emotionless man is not a pleasant companion, and most of us are willing to put up with the occasional emotional outbreaks that worry us, because we enjoy so much the pleasures that accompany the more attractive aspects of emotion. The lights and shades of social life are provided by the emotions, and if these were eliminated our existence would take on an intolerably drab colouring. To be sure, emotional excess leads to debilitation, and even wholesome emotion "takes it out of us," as the popular phrase has it. But most of us think the results worth the expenditure. We may live longer if we studiously exclude the emotions from our lives so far as that is possible, but many of us would fail to appreciate the lengthening of a life that did not include a fair emotional output. The Frenchman Fontenelle lived to be a centenarian and was never known to laugh, the two facts being said to be causally related. He lived so long because he had reduced his emotional output to the absolute minimum. Few there be who would care to buy his hundred years of dreary existence at the price he paid.

It goes without saying that the straightforward, level-headed man is fully alive to the dangers of giving the emotions too free rein. He is inclined to be rather severe in the restraints he puts upon them, and has a certain amount of sympathy with those who tend to suppress them altogether, though he cannot go all the way with them. In seeking to reach the golden mean in this matter, he consults the psychologists, from whom he learns that a whole section of their subject is set apart for the study of the emotional side of human nature. The adjective they apply to this branch of their work we have found to be *affective.* The word is directly connected with what is usually called *affection,* but is not limited to the kindly side. Psychologically, hatred is as affective as love. Sometimes the adjective is treated as equivalent to the pleasure-pain tone of human experience. But no sooner does the plain man get acquainted with this limitation of the term than he is warned by the psychologist that pleasure and pain in themselves are not emotions, though each emotion has a pleasure-pain tone about it. He is driven then to ask bluntly, What is emotion? and in so doing lets loose upon himself such a flood of conflicting answers as makes him retire in disorder.

THE "BOILING-OVER" THEORY

His attention may be profitably turned to that group of answers that throws most light on the suspicion with which the emotions are regarded. The view represented by this group may be not unfairly nicknamed the "boiling-over" theory. The implication is that the pleasure-pain tone of our lives goes on placidly with rises and falls of intensity, but occasionally—with some people frequently, with others rarely—there arises a disturbance of greater than usual violence, and the psychological pot boils over, everything is thrown out of gear, and general confusion results. While this gives a figurative explanation that is true enough so far as it goes, the reader may care to have the matter expressed in the more sophisticated form as it appears in the pages of a French psychologist of distinction named François Paulhan. There we find what is really a definition of emotion:

> The affective phenomenon is the expression of more or less profound trouble of the organism due to a relatively considerable quantity of nervous force being brought into activity without being able to be put to a systematic use.

The point made here is obviously that in emotion we expend a far greater amount of nervous energy than we get value for. Energy runs riot and uses itself up without any corresponding utilitarian result. But the practical question may be asked: Is the pleasure-pain experience not in itself worth while, apart from any economic gain? For it will be found that in most cases of complaint against the waste involved in emotion, economic considerations are at the back of the protest.

It is clear that there is distinct danger of squandering nervous energy by allowing too free play to the emotions. Most of us have little sympathy with Klopstock, the author of the "Messias," when he took a company of friends out in a boat on Lake Lucerne and, having by reading of his poems reduced them all to tears, exclaimed, "This is Elysium." But there are limits within which the emotions may be indulged without sin. These limits may be left to be determined by the conscience of each individual emotionalist, for what is excess for one temperament may be moderate indulgence with another.

Obviously, there is here the implication that we can in some sort regulate our emotions. Yet many people practically act on the assumption that the emotions are beyond their control. They will explain that they acted in a certain way because they lost their temper, clearly taking it for granted that this exculpates them in some way or other. So it is worth while to look into our power of control over our emotions. We are here reminded of what we found to be the case with attention. There are certain physiological bases for the emotions. These are partly connected with muscular phenomena, partly with vasomotor changes that regulate the distribution of the various fluids of the body—notably the blood. Professor Lange of Copenhagen works out in some detail the reaction of these changes on the emotional phenomena. Dilation of the blood vessels, for example, is correlated with the emotion of joy, and their contraction with sadness. If to vascular constriction there be added spasms of the organic muscles, sadness passes into fear; whereas if to dilation of the vessels is added incoördination of the muscles, we have joy developing into anger.

THE LANGE-JAMES THEORY

What annoys one in reading of these physiological conditions of the various emotions is the suggestion that in some way the changes in the vessels, nerves, and muscles *cause* the emotions, whereas in all probability they only accompany them. No doubt it is admitted that the emotions come before the intelligence in the development of man. They have their seat in the vegetative life. We are told by Spinoza that "appetite is the very essence of man," and that "desire is appetite with consciousness of self." In the same way emotion may be regarded as man's awareness of the results of certain deep-seated vegetative physiological processes. All the same, these processes have to be started, and it is here that we humans have our chance of taking a hand in causing, guiding, and avoiding them. They are certainly not completely under our control, but it is getting to be more generally accepted that we can, to some extent, bridle the vegetative functions by manipulating the muscular elements through which the emotions find expression. We are here brought up against one of the most interesting problems in all psychology, the relation between emotion and its expression. On this point the general view is that we become aware of a certain fact, a corresponding emotion is produced, then we express that emotion by some bodily reaction. We see a savage bear; we are horribly frightened; we run away. Professor William James, on looking into this matter, came to the conclusion that the events occurred in a different order; the second and third incidents should be interchanged. We see the bear; we at once get pale and bolt; *then* we get horribly frightened.

At first sight this change appears absurd, but the more we look into it the less ridiculous it seems. In any case, Professor James makes out a much better case for his contention than would at first sight appear possible. He points out that "if we fancy some strong emotion and then try to abstract from our consciousness of it all the feelings of its bodily symptoms, we find we have nothing left behind." Apart from the bodily accompaniments of emotion there is no emotion at all. An emotion and its expression are one. In Professor James's own words, "The bodily changes follow directly the exciting fact, and our feeling of the same changes as they occur *is* the emotion."

So good is the case for this new view that it struck another investigator just about the same time. This fellow pioneer in the new department of the psychology of emotion was Professor Lange, of whom we have just written. A year after Professor James had, in 1886, published an article in the English philosophical magazine called *Mind,* expounding his views under the title of "What is Emotion?" Professor Lange, who had not seen the article, published a little book on *The Emotions* in which he developed the same theory to all intents and purposes. No doubt there were certain differences. There were naturally variations between the two presentations. James, for example, laid much more stress on the share the peripheral nervous system has in the control of the emotions, while Lange emphasized the effects of the circulatory and other vasomotor processes. But that does not really interest us here. The important point is that if these two writers have hit upon the truth they have supplied us with a means of dealing with our emotions in a highly satisfactory way.

This view is usually known as the Lange-James theory, for though James was first in the field, the combination James-

Lange is misleading, and would convey the impression that only one person was concerned, a man whose surname was Lange and whose given name was James. So, Professor James cordially assenting, the combination Lange-James held the field.

The practical application of the theory is that if the physical expression of an emotion anticipates the emotion, then by causing the physical expression we may lead to the emotion itself. A mode of testing this theory in a practical way at once suggests itself. If it be true, then actors ought to experience the emotion they simulate on the stage. James at once set about finding out whether actors would admit that they actually experienced the emotions they feigned. The results were not so conclusive as he would have liked, but the majority of actors and actresses appealed to did admit that they experienced in some degree the emotions included in their part. Though approached this time from a psychological angle the problem in itself was not a new one, but had been dealt with as far back as Diderot in his essay on *"Le Paradoxe du Comédien."* It is true he did not decide the problem one way or the other. Both in his time and in ours there is a great deal to be said on both sides. It is not to be denied that some great actors are able to retain their self-possession all the time on the stage. Coquelin is said to have had interesting talks with himself even in the most critical passages of his performance. He would address himself in the most encouraging way: "Go it, Coquelin, old boy; keep it up: tears from them, my lad, more tears!" But if the matter were looked into more in detail it would be found in all probability that this self-communing on the stage took place only in plays with which he was thoroughly familiar, with the result that on the stage he could take liberties with his work, and play his customary part on the paid-up capital of his previous experience. At the earlier stages, when learning (or in the case of original actors "creating") his part, he would have to take account of the state of his own emotions.

Those who question the theory maintain that such experiencing of the emotions of the parts personated is an impossibility. It must be admitted that no actor could die in mortal agony six nights and two afternoons a week without serious detriment to his health. But it is not maintained that he experiences to the full degree the emotions that he simulates. It is enough that he goes through them in kind though to a very mild degree. Even so, there is no doubt that many actors, and still more actresses, have to put into their parts an expenditure of actual emotion that results in quite serious exhaustion. But perhaps it is hardly fair to take such a specialized situation as the stage as a mode of testing the truth of the Lange-James theory. Ordinary life supplies some excellent supporting cases.

James, for example, claims as a witness every yokel who in passing a graveyard at midnight whistles to keep his courage up. A great schoolmaster, Edward Thring, was fond of talking about the "potency of attitude" and never wearied of pointing out how much more clearly a boy dealt with his problem on the blackboard when made to stand at attention than when allowed to loaf about in a negligent attitude. Another excellent illustration is found in the experience of a medical man who, after having warned the wife or sister of a patient dangerously ill that she must put on a cheerful attitude, finds this sister or wife at a later stage in a depressing state of bad conscience and complaining that, obeying the doctor's orders, she has kept the corners of her mouth turned up and not down, has maintained a bright look in her eye and a spring in her step, has even hummed, though of course very quietly, and then as a result of all this has caught herself not only seeming cheerful but actually *being* cheerful—to the great hurt of her conscience.

We have seen already in dealing with attention that a very direct connection is assumed between various muscles and the expression of states of mind, and we found that Duchenne of Boulogne has the theory that every one of the emotions has a particular muscle set apart to express it. Most of us do not go quite so far as this, but it may be interesting to know that the *pyramidal* muscle is the one that attends to menace, that when we are in merry mood we are manipulating the *zygomaticus major,* and that when we wish to convey contempt we call into play the *triangular of the lips.* The theory of the connection between the muscles and the expression of emotion is by no means a new thing, though present-day authors are inclined to reduce it to much finer issues than the writers of the past. Away back in 1806 Sir Charles Bell published a useful book under the title, *Anatomy of Expression in Painting,* and Darwin has done his share in his book on *The Expression of the Emotions.*

Most of us, however, are not on sufficiently familiar terms with our own muscles to address them by name, and we have a rather definite view that if we could thus address them we would get no reply. So we are content to accept the general effect produced on us by a simple inspection of the muscles as they are decently covered up on the human face. When we go to a foreign theatre in a country whose language is unknown to us we are often able to make quite a good guess at the general run of the plot and the state of mind of each of the actors. Here, to be sure, we are liable to great and ludicrous errors through misinterpretation of certain of the facial muscular contractions. No doubt in a case like this we have a much wider range than the mere deliberate expression of the actors. We have the whole background of the scenery and the stage apparatus. We find indeed that when an actor is challenged to express a given emotion by mere facial manipulation he is not by any means quite successful.

In the dim days before the World War a popular London magazine, *The Royal,* published a series of eight photographs of successful actresses, each depicting a characteristic state of mind. These were: disdain, coquetry, hatred, indignation, supplication, exultation, terror, aspiration. I have tested the success of the expression by getting many classes of students of all kinds to identify the state of mind by an examination of the photos, with of course the explanatory titles cut off. Almost never could a student identify more than half of the states of mind. Yet in almost every case the state of mind was admitted to be rightly represented when the observer was told what the actress wished to express. Terror was not infrequently identified as indignation, exultation was confounded with disdain and sometimes with coquetry, though this last was seldom missed because the actress in question had taken the precaution to provide herself with a tiny red mask which she held in her hand in such a way as to lead to almost instant recognition of the state of mind she wished to suggest. For a similar reason supplication was seldom mistaken; this actress held her hands in the attitude of prayer. It interested me to note that when I had the opportunity of testing a class of young actresses at a school of dramatic art they made just an average show. I had expected them to rank far above the lay students.

Screen actors depend more on facial expression than those who play on the ordinary stage. But even with their special opportunities and training they do not seem to be particularly successful in "putting over the footlights" the emotions they wish to express. My experience of the movies is not sufficient to warrant me in coming to any such conclusion. I am basing my generalization on a sarcastic coloured front page of the American magazine *Life* for June 2, 1923. There we have four faces under the heading "The Gamut of Emotion on the Screen." The emotions are plainly labelled: determination, ecstasy, envy, fear; the point being that the same pretty face is economically made to do duty for the quartette of emotions; the four faces are absolutely identical.

The Lange-James theory means so much to us in the way of controlling our emotions that we begin to take a personal and partisan interest in its truth. Fortunately, when we look further into the problem we realize that it is not essential for the theory to be completely true in all its details before it can bring the comfort we want. The exact inversion of the second and third elements in the complete emotional unit is not essential to the application of the theory to real life. We may admit all the cold logical arguments of those who oppose the new order and admit that the case for the priority of the *running from the bear* over the *fear* the running engenders must be given up as not proven. But this concession leaves us a loophole, so that we are able to claim simultaneity instead of priority for the *expression* of an emotion as compared with its *appearance* in our experience. If the fear and the running begin at the same moment it is enough for our purpose. It is well known that people sometimes run the greatest danger in perfect calm, thus earning the admiration of the onlookers, only to lose it when the apparent heroes slump unconscious to the ground after they have had time to realize what a danger they had escaped. They went through the peril dauntlessly because neither the danger nor its psychological consequences made their appearance. When they did come they came together with such startling simultaneity that fear and its expression mingled on the ground.

The trouble indeed lies in separating in actual chronological order the elements that make up the total experience of an emotion. There is nothing wrong with the logical analysis of the emotion. Logically, of course, fear is the cause and its expression the effect, but the two may occur so closely together in point of time that the chronological analysis has no practical value. To a man who is struck by lightning the flash and the crash are so nearly simultaneous that precedence is of no consequence. The complete incident makes up a dreadful whole, one and indivisible.

ON REGULATING THE EMOTIONS

Leaving to the opponents of the Lange-James theory the logical victory to which they are probably entitled, we may pass on to the practical presentation of the case that leaves room for us to make full use of the weapon James has put into our hands. A fair number of psychologists can be got to approve of a working theory that offers us all the advantages we need. The emotion may be regarded as the sum of all the organic sensations that make it up, and some of the psychologists do not really object when we slyly insert the somewhat question-begging little addition "and vice versa." In other words, we may assume, without being too dainty about the logical aspect, that wherever all the essential organic sensations are gathered together there the emotion necessarily is in the midst of them as an essential constituent of the whole. We slip in here the idea of the emotion as a whole much as certain philosophers slip the ego into a series of independent sense experiences so as to give them a unity and thus make up experience.

But we do not need to be quite so ingenious as all that. Psychologists are good enough to put the matter in a way that is acceptable to them and perfectly convenient for us. When we get them the length of saying, "So far as the bodily cause is set up, be the means what they may, in so far the emotion is present," we have led them to raise the question of the possibility of an "objectless" emotion. Can there be an emotion with no object to cause the emotion? Can we build it up out of physiological elements without any psychological basis. Here we appear to be poaching on the territory of the physical sciences, where we are continually hearing about compounds made up of wrong materials, or at any rate unnatural materials. These products are called synthetic substances. Can we have a synthetic emotion in somewhat the same sense as we have synthetic india rubber? We cannot hope for a categorical answer. But we are not greatly concerned, since we can get a sufficiently objectless emotion to serve our purpose.

Let us put it this way. Suppose a given emotion is made up of, say, one hundred elements. It is clear that if we can bring into existence in a given case one of these elements there is at least a better chance of reëstablishing that emotion than if no constituent element were present. If we can reinstate three of these elements the chance of reëstablishing the whole is much more than three times greater than when we had reëstablished only one. Without being too mathematically exact in the matter, we may say in a general way that, while the number of reëstablished elements increases in arithmetical progression, the chances of reëstablishing the whole increase in geometrical progression. If a man assumes the various symptoms of anger, every new element he introduces increases the chance of real anger setting in.

On one occasion a junior teacher in an elementary school—they were known at that time as pupil-teachers—persuaded his headmaster that a certain pupil really needed a whipping. The master was a notorious pacifist in the matter of corporal punishment. He tried every expedient before he would resort to the cane. But on this occasion the young teacher had made out such a good case of prolonged restraint and the trying of every possible alternative that the master, sorely against the grain, went into the classroom and, in order to screw himself up to the point of doing the hateful job, started making a speech on the heinousness of the offense that demanded correction. He played the part well: his eyes flashed, his gentle voice hardened, he brought down the cane on the desk with an intimidating crash, he ran his fingers through his bushy hair and raised it on end. No one would have suspected that he was not furiously angry—and as a matter of fact he was. The punishment turned out to be much more severe than he had intended, and for long afterward he regretted, not so much that he had punished the deserving young rascal, but that he had worked himself up to this dramatic anger that turned into the genuine article. It would, of course, be hard to say at what precise point pretense became reality, but somewhere in the process all the other elements necessary to make up the emotion rushed into being, and the state was complete.

Looking at the matter from the other side, we can all recall cases of experiencing an emotion at times or under circumstances that made it inadvisable to give it expression. We often succeed so far as we know in completely suppressing its expression, and we may use this as an argument that emotion and its expression are one. But in cases of this kind we must take account of two considerations. First, we are much less capable of repressing all the symptoms of our emotion than we imagine. When we are angry, for example, we are often able to suppress all the other outward elements except the timbre of the voice. It is true that outsiders who are not particularly interested in us may see us in what we know to be a consuming rage, and yet they may be quite unaware that we are showing any symptoms of anger. Our intimates, on the other hand, may know that we are really angry, and admire us for keeping ourselves so well in check, and yet recognize by our voice tones how hard we find it to keep all expression in leash.

The other point is that so long as we keep thoroughly repressed any of the essential elements of expression we do not have the emotion fully developed. The very fact that in the presence of his superior a junior official cannot give vent to some emotion prevents that emotion from having full play. The subordinate cannot be as angry as is natural to him, or cannot enjoy a ludicrous situation as completely as he would in the absence of his superior. So that here on the negative side we have a way of controlling our emotions by physical means. It is plain that in thus manipulating material things to help us in manipulating our emotions we depend in the last resort on the authority of the ego. So soon as it lets itself go all the securities tumble down. The Lange-James theory helps only those who are willing to help themselves, but this indirect help is of the utmost importance. The angry wise man takes a cold bath, knowing that it will help him not only literally but metaphorically to cool down. Tam o' Shanter's wife, on the other hand, exemplified the opposite attitude when she sat "nursing her wrath to keep it warm."

Naturally, we think of cases where the emotion cannot be downed in this way, when it is a more or less permanent state of the psyche and does not entirely depend on the fluctuating state of the body. But we are here going rather beyond the range of emotion proper. Emotions, like various bodily organic disturbances, may become chronic, and various ways have been suggested of naming and dealing with them. Sometimes deep-seated tendencies to act in a particular way in relation to our environment physical and social are named *passions*. The term is normally used in reference to an emotional basis. One can imagine a man gradually acquiring a habit of giving way to his temper, becoming more and more chronically bad tempered, and getting himself described as a passionate person. The ordinary sex affection that marks normal respectable life does not usually rise to a pitch that may be described as passion, though sometimes when irritating hindrances occur a supersensitive state may supervene, when the term may be properly applied. We usually regard passion as some emotional bent deeper than ordinary and marked by a degree of permanency. Psychologists sometimes tell us that an emotion rises, dominates, and subsides; while a passion goes on increasing all the time. The distinction does not quite stand the test of experience, for we do not find that passions always last forever. They sometimes die down, so that if the distinction is to be made at all it had better be made a matter of degree rather than of kind. It is true that passions not infrequently grow deeper and deeper and finally disappear only with the body itself. Indeed, "the ruling passion strong in death" is a well-used saying that gives some justification to the distinction we are dealing with. But it is probably enough to endow passions with greater intensity and longer duration to separate them off from emotions. Passions are sometimes compared to rivers running in deep ravines, while the emotions are like quick-flowing streams with low banks over which they are apt to flow with greater or less frequency.

While emotions may be regulated to some extent by manipulating their modes of expression, and passions can be built u or broken down only by long-continued effort, there is an intermediate group of tendencies of very great importance that have only somewhat recently come into prominence. They are called *sentiments,* but the term has been rather loosely applied in the past. The French psychologists use the term in a very general way, and indeed make it include the whole range of what we have seen to make up the affective aspect of psychic experience, and in English psychology it has also been very vaguely used. At last there came along Mr. A. F. Shand, who set about giving it a very definite and useful application which helps us to clear up the time element in dealing with emotions. While we all have emotions we are not exercising them all the time. If I say I hate liars, or I love truth, it does not mean that I am hating liars all the time. I have other things to love and to hate, and I have other affective states to experience besides these two. But every time I come across liars or the truth my attitude toward the one is hate, toward the other love. An emotion is an individual thing occurring on a particular occasion and dying down, though of course ready to reappear on some future occasion near or remote. Love and hate are not really emotions but ways in which the emotions are exercised in relation to certain objects. We do not love a certain country all the time, but we have a permanent possibility of loving that country whenever occasion arises. Love and hate are called sentiments, and Mr. Shand defines a sentiment as "an organized system of emotional tendencies centred about some object."

The sentiments, then, according to Shand, are a series of permanent possibilities of combining certain emotions in connection with objects or circumstances in our experience. This does not mean that we must make a list of the various objects or circumstances in relation to our sentiments with regard to them. It is enough, for example, to know how love and hate work, without having to make out a list of everything we love and hate. Other sentiments may be illustrated by envy, admiration, scorn, gratitude, though these may also be treated as complex emotions. The more we look into the matter, the more difficult it becomes. Not only is it hard to say what an emotion really is, but it seems almost impossible to determine which of our affective states are entitled to be called emotions.

THE LISTS OF DESCARTES AND MCDOUGALL

The earlier writers, having a clear field, laid down the law with considerable confidence. Descartes, for example, tells us definitely that there are only six primary emotions: admiration, love, hatred, desire, joy, sadness. All the other emotions he maintains are compounded out of some of these. Professor William McDougall, formerly of Oxford and now of Duke University, U. S. A., accepts this challenge and works out a scheme of simple and complex emotions that is in the highest degree interesting and useful.

He begins by correlating the emotions and the instincts, and thus at once sets up an attractive basis of organization. He selects seven of the instincts as the basis of his scheme, and with each of these instincts he correlates a corresponding emotion.

His definition of emotion is "the affective aspect of the instinctive process." Naturally, the best way of conveying a clear idea of his theory is to give the actual seven instincts he selects, with the emotion corresponding to each:

INSTINCTS	CORRESPONDING EMOTIONS
Flight	Fear
Repulsion	Disgust
Curiosity	Wonder
Pugnacity	Anger
Self-abasement	Subjection
Self-assertion	Elation
Parental Instinct	Tender Emotion

McDougall makes out an excellent case for his theory of the connection between the instincts and the emotions, but when he begins to apply his scheme he has the inevitable difficulty in making his selection of the instincts and their correlated emotions. He is embarrassed with riches. He has such a stock to choose from that it is difficult to pick out those that are of such fundamental importance that they may be fairly claimed as the basis of the whole instinctive and emotional structure. Then why *seven?* We have seen that Descartes was content with six, which we had better repeat for purposes of comparison. They run: admiration, love, hatred, desire, joy, sadness. This list is supposed to exhaust the simple emotions, and yet it has not a single emotion that is on McDougall's list. Love and hatred are not recognized as emotions by McDougall but are classed as sentiments, and admiration, instead of being the simple emotion that Descartes holds it to be, turns out to be an exceedingly complicated affair, as we shall see presently. Another psychologist of somewhat the same school as McDougall is Professor Lange whom we have already encountered. It is worth while to compare his list with the above two. It runs: disappointment, sadness, fear, embarrassment, impatience, joy, anger. This list has only two emotions in common with McDougall's, namely, fear and anger, though joy in the one list may be doubtfully regarded as equivalent to elation on the other. Lange and Descartes have but one emotion in common—joy.

Of the three lists it is interesting though probably not significant that two of them have adopted the number seven. Neither McDougall nor Lange gives any hint of why this number was chosen. No doubt it is the sacred number in certain religious connections, and even in science it has a certain prestige, as witness the colours of the rainbow, and the notes in the musical scale. But these considerations do not seem to have any connection with the choice of an emotional gamut. In all probability neither McDougall nor Lange had any number principle in their minds when they made their selection. The fact is that they had to stop somewhere, and seven appears to be a reasonably workable number. We must admit that at any rate McDougall has made an excellent use of the number he has selected, but we need not be misled into thinking that there is anything sacrosanct in the mystic seven.

Of more importance is the explanation of the totally different lists of the emotions. This is no matter of accident. We can quite understand that Descartes, in dealing with a subject that had not hitherto been worked up, would naturally make a concrete approach and deal with his materials in rather a descriptive way. He was working, in short, with psychology at its natural history level, and not unreasonably thought that his choice was made up of simple elements, whereas later analysis showed that it included some very complex states of mind. With regard to the other two lists it may not unfairly be said that each of the list makers was guided in his choice by the use he intended to make of it and the general line of thought that guided him in the making. Lange's view of the nature of the emotions was largely concerned with the functioning of the vascular system that regulates the supply of various fluids to different parts of the body and with the work of the nervous system; and when one looks into his list one finds no difficulty in seeing how well his chosen emotions illustrate his theories. McDougall, on the other hand, being interested in the building up of a social psychology, looks out those emotions that fit in best with the manipulation of human nature on a collective basis.

The truth seems to be that McDougall has a tidy logical mind and likes to arrange things methodically, rather after the French manner. This view is in keeping with the method he adopts in working out the correlations of the emotions and the sentiments. He has introduced a system of what may be called *psychological algebra* that leads to a rather interesting scheme of building up the complex emotions after the suggestion of Descartes but complicated by the inclusion of the sentiments. To understand the combinations he suggests, we must be clear about two of the instincts that he treats in a rather unusual way. Self-abasement is not a very pleasant name for the feeling of inferiority we all sometimes experience on appropriate (and sometimes inappropriate) occasions. This we have met with before in the "inferiority complex" of the psycho-analysts. McDougall appears to regard this as fundamental, and not derived as the psycho-analysts would have it. The corresponding emotion is called *subjection,* which I suppose is the nearest term we have in our English vocabulary. It has to be noted that in itself the term does not necessarily imply humiliation, though that form of subjection must be included in the possibilities of the emotion. The parallel instinct of *self-assertion* with its correlate emotion *elation* becomes clear by contrast.

Simple emotions are united into binary or twofold combinations that may be illustrated by such equations as:

Disgust + fear = loathing.
Anger + disgust = scorn.

Ternary, or threefold, compounds may be represented by

Fear + anger + tender emotion = anxiety.

But we may build up still more complicated equations. Beginning with wonder plus subjection, we get admiration. If we add fear we get a ternary compound that may be classed as awe. If now we add gratitude we get the whole swollen up into reverence, the complete equation running:

Reverence = wonder + subjection + fear + gratitude.

But gratitude is itself a binary compound made up of the two elements, subjection and tender emotion. Accordingly, the whole reverence equation would have to read in mathematical form:

$$\text{Reverence} = \text{wonder} + \text{subjection} + \text{fear} + (\text{subjection} + \text{tender emotion}).$$

Here the mathematically minded reader will want to know whether the double occurrence of the element subjection means that this element has a dominating position in the quaternary compound.

At this point we catch ourselves again on the brink of overworking a metaphor; for this quantitative analysis is nothing more. But though the scheme must not be pressed to quantitative details it has distinct value in stimulating interest and inquiry. Much of this applied psychological algebra will rouse controversy. But this is all to the good. If anyone does not see his way to accept contempt as made up of disgust + elation he may accept it with the explanation that elation here would be better described as positive self-feeling (i.e. the opposite of negative self-feeling or subjection). The system lends itself to easy but interesting social problems. For example, the question may be asked: When to loathing is added the emotion fear, what is the result? Quite probably few would suggest fascination, and when this answer is supplied, many would be inclined to dispute its accuracy. All of which clash of opinions is as it should be among those who want to get some good out of the study of psychology.

The whole McDougall scheme is attractive from its suggestiveness. It cannot be regarded as in any way final, and the other psychologists are doing their best in their lectures to make this clear to their hearers. But as a mode of presentation of valuable facts the scheme is excellent and gives much help in putting in their proper places many facts that would be otherwise left scattered about in lamentable disorder. One notable example of this unifying tendency is the introduction of a definite correlation between the instincts and the emotions, formerly treated as quite separate from each other. Whether this correlation can be maintained as a fundamental one remains to be seen, but at the very least it has already supplied an admirable expository device for introducing order into a department that sadly needed such a service, for our views on the nature of the instincts are even to-day, to put it mildly, very vague.

INSTINCTS AND EMOTIONS

The antiquated notion, on which the people who to-day are old were brought up, was that instincts belonged to animals, that they did for animals what the mind does for men, and that on the whole the animals had the advantage, so far as accuracy of working went, though it was admitted that man had greater freedom. The bee might have the advantage over man in the accuracy with which it could do its work involving mathematical elements, but man had ultimately much the more effective instrument, since he could apply his mind to any circumstance in life, while the bee's skill is absolutely limited to the narrow range of the hive. Entomologists tell us that in the newfangled hives of theirs every action of the bees can be comfortably observed from the outside. The prying scientist is glad to report that he is able with his own eyes to see the working bee make its way out of the egg, shake itself for a second or two, and then proceed straight away to take its place among the particular group of workers that it was born to join. The ordinary human being who happens to be not a scientific observer but a workaday parent hears this news with no enthusiasm but with a certain envy. If only his young people could arrange to have their education completed like the bee's before they made their appearance in this exacting world! But the compensation comes in the fact that though the bee starts with an enormous advantage in the race, it cannot get on. It pays for its initial efficiency by a total inability to make progress. The law of compensation comes to console the worried human by assuring him that the length of time during which a young animal must remain helpless is in direct proportion to the height he may attain in the animal scale

The longer the helpless period the higher the stage the animal can reach.

Here philosophy takes a hand in the discussion and has some encouraging things to say about the relation between intelligence and instinct. There is an epigram sometimes quoted in textbooks that deal with matters of this kind: "Instinct regarded from within becomes intelligence; intelligence regarded from without becomes instinct." After the manner of epigrams, this leaves us groping. Going back to our inquisitive scientist prying upon the emerging bee, we have the authority of our epigram for saying that the bee is acting instinctively; but if the bee could look upon its own actions they would by that very fact become matters of intelligence. This does not seem to help us very much so long as we are of the opinion that the bee does not consider its operations in this way at all. If the truth must be confessed we can never be quite sure what view the bee may take on the matter. For outside information on the point we must refer to the ingenious behaviourist interpreters.

So outrageously skilful are some of the insects that we are almost tempted to endow them with some sort of a thinking process. There is in particular an exasperatingly ingenious wasp who plays its little part in the pages of many a psychologist. If I cannot remember its name at the moment it is not for lack of having come across it often enough in sedate volumes so learned as to provide a perfect guarantee of honesty and good faith. This creature, when the time comes to take thought of its latter end, looks around for a safe place to deposit its eggs before it shuffles off this mortal coil. There is an abundant supply of organic matter among which the eggs could be deposited with the certainty that by the time the progeny emerged they would have plenty of food. But the wasp is not content to leave her successors to feed on corruption. They must have fresh meat, not decaying stuff. The problem has been solved in advance by Nature—unless we are willing to grant this exasperating wasp the power of reason. Without knowing anything at all about the future she selects a particular kind of grub that promises just the sort of food the young wasps will need. The problem of keeping the food fresh against the day when the young wasps will emerge from the eggs is solved by stinging the grub in a certain nerve centre, with the effect of reducing the creature to a comatose state, in which vegetative condition it remains, thus keeping its carcass in good condition for the ravenous young wasps when they make their appearance.

A case like this naturally challenges the philosopher, for the pure psychologist has to give up the problem. Henri Bergson makes the point in his account of the development of man that spirit in general (not man's in particular) in its evolution came to a dividing point where the path took two directions. Along the one line went spirit that was to develop into the non-material part of the animals, along the other went spirit that was to develop into what we have been busily studying under the name of *psyche*. The result was a clear differentiation. Along the animal line was developed this thing that we call instinct; along the other came into existence what is now called intelligence. At the end of the first corridor is to be found the insect, at the end of the other, man. I have no doubt that if we could accompany Henri Bergson along the corridor of animal development the insect we would find occupying the highest place in the instinct section would be this irritating meat-preserving wasp.

Our envy of the super-efficient instinct users is modified by two considerations. First we have intelligence as a compensation. The animals have no doubt consciousness of a kind, but we have a very special kind of consciousness that we believe, and philosophers give us many reasons for cherishing the belief, that the animals do not possess. The kind of self-consciousness that gave us so much trouble in the earlier parts of this book is the peculiar quality of man and enables him to do as wonderful work as the exasperating wasp, only what it does in one particular case he can do wherever the need arises. The animal's work is wonderful only because its kind has not at its back the resources that man has.

The second compensatory consideration is that we humans are, after all, not entirely without instincts. At the parting of the ways, when spirit split into two sections, the animal section did not carry off all the instincts. The human section carried off its fair share, and only lost its possession of them because they were not afterward exercised. Intelligence interfered with the purely instinctive activities, so the instincts from lack of use became starved—or in the language of chill, atrophied—and disappeared. Some psychologists of to-day tell us that we have as many instincts dormant or active as any of the animals, the only difference being that the animals are entirely dependent upon them, whereas we have another power that in most departments of our life takes their place, though in certain directions we are still able to utilize some of them. As a mere matter of clear thinking, perhaps it would be well to be careful in the use of the word *instinctively*. We sometimes speak of skills that we have completely mastered as if they were instincts. A tennis player will say, for example, that he "instinctively" made some particular movement in the game. This may be either correct or incorrect, according to the nature of the action in question. If it is something that he does just because he is a human being —something to defend his eye, or keep his balance, for example —it is rightly called instinctive. But if it is a matter of dealing with the ball in an effective way, and this skill has been acquired as the result of careful training, it is automatic, if you like, but not instinctive. We cannot acquire instincts.

The reader is probably willing to accept the view that instincts come with us into the world, and that they are more characteristic of animals than of men, and yet feels that he is not quite sure what an instinct really is. In this he is in no exceptional position. Few subjects, even in psychology, have given rise to such an inordinate amount of discussion as the nature of instinct. It is only the poet who dares to set out without reservation a clear-cut difference between intellect and instinct. Pope usually knows quite well what he means in his verses, though he does not always carry his readers with him. When he gives us the couplet:

Reason raise o'er instinct as you can,
In this 'tis God directs, in that 'tis man;

he supplies us with a good working distinction, though it is accompanied by a religious suggestion that is not essential to the discussion, but does not in any way affect the argument.

Psychologists, however, could not be expected to accept such a straightforward demarcation. So hot did the discussion of the nature of instinct become that in the year 1910 all the hosts of philosophy and psychology in England came together to see what they could do about marking off the confines of the term. A symposium was held on the subject of *Instinct and Intelligence* under the auspices of three of the most formidable associations in Great Britain: (1) The Aristotelian Society, (2) The British Psychological Society, (3) The Mind Association. The most vivid impression left on those who attended, or who afterward read the reports of the proceedings in the *British Journal of Psychology,* was one of irritated bewilderment at the wide difference of opinion among those who claim, and who are admitted, to be the authorities on the subject. When psychologists differ among themselves the plain man is entitled to make his choice among the theories offered. If he is wise he will lean to the safe side, and that will be found among those theories that show a physiological bias, for the balance of current opinion is moving strongly in that direction. Out of the welter of symposial differences we cannot do better than select the definition suggested by Dr. Lloyd Morgan as a working basis. He defines "instinctive behaviour as that which is, (1) on its first occurrence, independent of prior experience; (2) which tends to the well-being of the individual and the preservation of the race; (3) which is similarly performed by all the members of the same more or less restricted group of animals; (4) and which may be subject to subsequent modifications under the guidance of experience."

McDougall adopts a definition slightly different from, but certainly not antagonistic to, Lloyd Morgan's, and proceeds to saddle the instincts to the service of man by linking them up with the emotions. If he fails to keep the instincts and the emotions quite apart from each other, we must not complain too much, for had he maintained a more strict separation we would certainly have charged him with rigidity, whereas in point of fact he has given his scheme just that degree of elasticity that enables the intelligent reader to apply it readily to his own experience. Our attitude toward Professor McDougall should be one of gratitude for the work he has done in clearing up our views about the emotional side of our being, and we should set about making the best use in our own lives of the data he has supplied.

CHAPTER XVII

DEMOS

Our Imitative Nature—When Crowd Psychology Occurs—The Atomic Psyche—Social Molecules—Crowds—The Force of Imitation—The Individual and the Crowd—The Demagogue—Psychology of the Jury—International Psychology

HITHERTO we have been dealing with the individual person as a separate independent unit. But the clergyman does not fail to remind us in season and out of season that "no man liveth to himself alone." No doubt his insistence is justified on the moral side, for the preacher has mainly in view selfishness in the bad sense of that term. But we have already seen that in one sense man must live within the narrow bounds of his own personality, though we found that a means was available to surmount in some sort the barriers between personalities. In actual life there are indeed very few who want to live to themselves alone. It is only the exceptional person that desires to live entirely apart. Philosophers get credit for a certain preference for being alone, but plain practical men are sometimes not sure even about the philosophers. It is into the mouth of Alexander Selkirk, the prototype in real life of Robinson Crusoe, that Southey puts the pertinent question:

O Solitude, where are the charms
That sages have seen in thy face?
Better to dwell in the midst of alarms
Than reign in this horrible place.

The plain truth is that man is a sociable animal who likes his fellows in a general way and would rather put up with inconveniences and competition than withdraw to some place that by its very lack of companionship would appear to him "horrible." So far back as the Fourth Century B. C. this human quality was recognized by no less a philosopher than Aristotle, who was so impressed by the fact that he used a specific adjective to emphasize it. When he called man a *politikon zoön* he did not use the phrase with any reference to what we now call politics. *Zoön* is the Greek for *animal,* and all that Aristotle meant was that man is an animal that loves to dwell in cities, and that only in a community could he reach his full development. Indeed, he went further and maintained that man was not a complete man so long as he lived entirely alone. The solitary, Aristotle held, could not be a real man; he must be better or worse than humanity. The solitary must be so much above ordinary men as to rise to the rank of divinity, or he must sink below the human level and take his place with the lower animals. His conclusion is gathered up in a neat phrase of four Greek words that finds its way into all the philosophical textbooks, and that may be thawed out into simple English in the words 'Either a god or a beast."

Certainly the plain man living with his fellows, as Aristotle says he ought, is neither so low nor so high as he is here pictured. But it would seem that this collective life is not all gain, for with people living in masses there appear to be some inevitable evils that the world recognizes in a half-reticent way. The very word *political* is apt to carry a bad odour, and the Greek word at the head of this chapter, *demos* (meaning *the people*), is, to say the least, suspect. No doubt modern tendencies have rather rehabilitated the word, since there are so many folk in the world who call themselves democrats. But the history of the word is a checkered one, and the adjective frequently applied to it, "many-headed," is not meant to be complimentary. However that may be, this *demos,* with its question-begging adjective, directs our attention toward a study of human nature in bulk.

If a man be the sociable animal he is claimed to be by Aristotle and others it looks as if we had not gone the right way about in dealing with him in this book. But there is nothing wrong with the application of the well-worn slogan, "Divide and conquer." We are entitled to deal with the units before we treat them in combination, though the configurationists may have their justifiable doubts. In this particular case there is a special reason why we should begin with the individual, for we have found that the very essence of human nature is its inherent individuality. It is only at the second remove, and in an indirect way, that we get into touch with one another. Still, since we have come to some sort of understanding regarding the nature of the individual as such, we must now take up a consideration of his reactions upon his fellows.

OUR IMITATIVE NATURE

Getting to the very bottom of the process of social development, we find a sort of chameleon stage, marked by the fact that we are by nature inclined to take colour from our surroundings. We are imitative by nature, and this imitation is not always conscious. Throughout a day's intercourse we not only play many parts, but we take on many colours. We are indeed a different person according to the person or group of persons upon whom we react. Take the case of a schoolboy of fourteen who has had a thrilling experience in the morning. All through that day he takes every chance of recounting what happened. But the tale varies materially according to the person to whom it is told. There is one version for his father, quite a different one for his mother, if he can catch her alone. The version that suits his brother of seventeen will in no way meet the case of his brother of ten, while his sisters of whatever age demand a totally different treatment; and here again, if he gets them separately, the age element will produce modifications. It is not suggested that the boy is lying: all the stories may be quite true so far as they go. Of the police-court trilogy—the truth, the whole truth, and nothing but the truth—the first and third are probably given, but the combination of the elements is different in each case, and the emotional tone is not the same.

The boy in fact is as many different temporary personalities as there are different personalities upon whom he reacts. This is not the same sort of classification as that involved in Oliver Wendell Holmes's six Johns, beginning with John as known to himself and ending with John as known to God. In our case, we have only one John, showing different facets according to the personality upon whom he is reacting. What is the real John is a difficult problem, but it is obvious that he is the core of the whole, the sum of the common elements that are present in all the Johns that make their appearance during the day. We generally regard the real John as the person who is left to go to bed when the captains and the kings depart. When Bacon used to lay aside his official robes and, addressing them as they lay on the chair, sometimes said, "Lie there, my lord Chancellor," most people would agree that there spoke the real Bacon.

Chemistry offers some tempting analogies to illustrate the psychology of the group. The individual person may be compared to the atom which apparently changes its qualities according to the kind of combination it makes with other atoms. The combination of atoms forming a molecule may be compared to the grouping together of a few individuals in a more or less social way. Certain atoms may exist side by side with one another without anything happening; so certain persons may stand or sit by one another without any apparent result. Half a dozen silent people in a railway compartment may produce no appreciable effect on one another and certainly do not make up anything corresponding to a chemical molecule. Such a group of individuals may be compared to what is called a *mechanical mixture,* in which the various substances are merely mingled together without in any way affecting each other. Sand, pepper, dry salt, and sugar may make a mixture of this kind that forms a dirty gray powder. But if we had the patience of Job, or could borrow a fairy godmother for a few minutes, we could restore the different substances to their former places and have once more a pile of sand, a pile of sugar, a pile of salt, a pile of pepper, and no one need be a bit aware that any mixture had taken place.

With a chemical compound things are different. Here the elements combine in a much more intimate way. Suppose we take a colourless gas and a silvery fluid metal and make a chemical combination of them, we do not get a silvery gas or a colourless metal. We do not get either a metal or a gas, and the result is neither silver nor colourless. What we do get is something totally different from either—a powder of a bright scarlet colour.

What happens when we make a chemical compound out of the colourless gas, oxygen, and the silvery metal, mercury, is the sort of thing that happens when we make a psychological compound out of a mass of human material. To be sure, quantity is not of the essence of the chemical combination. Mercury and oxygen under proper conditions make oxide of mercury, irrespective of the quantity of material available, whereas the size of the group of persons does make a considerable difference in the kind of result produced. Up to a certain point the greater the number of people in a crowd, the more striking the result.

WHEN CROWD PSYCHOLOGY OCCURS

It has to be noted that a gathering of people, however great the number, does not necessarily make up what is properly called a psychological crowd. If four or five thousand people get together at a great city railway depot it does not follow that we have a psychological crowd. Collective psychology is not involved unless the gathering of people is moved by a common impulse, unless, in other words, it becomes a psychological unit. In an ordinary railway depot gathering each person or group is moved by an individual purpose. Each person wants to get to his own particular ticket office, his own particular entrance to the tracks, his own particular track, his own particular train, coach, compartment, seat. Once there, he settles down comfortably to his own particular newspaper, and the only point in common with the others in his train is the wonder whether it will pull out on time.

If, however, on his way through the depot to his train, something of general interest occurs, say a loud report, the fall of a girder, the appearance of a great cloud of smoke, the whole mass of people gets suddenly welded into a unity dominated by a common interest. If a comforting explanation of what has occurred becomes manifest, the collective feeling disappears, and the mass becomes a mere collection of units again. On the other hand, if no explanation occurs or if the suggested explanation indicates some serious common danger, the collective spirit gets stronger, and the crowd begins to act as a sort of corporate unit. Under such conditions it will do things that few if any of the individuals making it up would wish or dare to do. The collective unit will rise above and sink below the level of its individual members. The study of the nature and reactions of this sinister aspect of *demos,* the many-headed, becomes important to all of us.

For it is at this stage that the crowd becomes pathological. Its effervescence may pass off harmlessly by more or less natural if quaint channels, or the roused crowd may take the bit between its teeth and go to deplorable excesses.

The language of England has been enriched by a new word that appeared toward the end of the Boer War. This is "mafficking," and indicates excessive jubilation over an unimportant success. We had been so tired of reading continually of our generals "regretting to inform" us of untoward incidents that when a clear victory, though a little one, was officially reported, we lost our heads and made a good deal more noise about it than was seemly, or usual, among English folk. The name of this expression of rabid collective psychology took root, not because we were proud of it, but because we were not. It was retained as a warning—Lest we forget. On that occasion sober business men—of the literal, not the Volstead, variety—did very foolish things. They bellowed and sang, they paraded the streets, they climbed lamp posts, they sprang upon their desks and threw their hats into the air, not seeming to care whether they saw them again or not. Had such men, men who wore spats, done these things by themselves, they would have been inevitably committed to the place prepared for those who lose their psychic balance. But what was called "allowance" was made for these respectable demonstrators, and no more was said on the subject, and nothing done beyond retaining the word *mafficking* as a reminder of how we suffered psychological collapse when the small African town of Mafeking was relieved.

There are various degrees of intensity of psychological collective reaction. We started with the effect on the individual of the reaction between him and his fellows, when the numbers were small. We note that even here quantity has a little influence. There are people who are at their best when interacting with only one other person. For them "between four eyes," in the French phrase, represents the best possible condition; they are most effective in what the Scots call "a twasome crack," the plain English of which is "a talk between two." The introduction of a third person may spoil the position in either one of two ways. It may dry the speakers up, make them retire within themselves and become mere onlookers; or it may stimulate them to show off and play to the gallery.

Some people need an audience in order to do themselves justice. This does not necessarily mean that they wish to make a display, but merely that they require a certain degree of outside stimulus before they can get up the necessary energy to do themselves justice. In addition, the amount of such stimulation varies with the individual. Investigation into the degree of stimulation suitable to different temperaments would probably lead to very interesting results. It may well be that each of us has a definite index of stimulation that may be represented by the number of persons in a group that brings out the best that is in us. We may rise to our highest in a group of two or three or four—or we may need an entourage that would amount to a little crowd, or even a big one.

The matter receives an interesting illustration in determining the ideal number that ought to make up a walking party for a tour. Let us leave out of account the matter of sex, as this introduces seriously disturbing elements that are not relevant to the problem of number. Some say the ideal number is two, others three, while others vote for four. It is not desirable to go further, for any greater number ceases to be a walking party and becomes a procession. Those who favour two will naturally be themselves of the tête-à-tête type. People of a mathematical turn of mind will readily adopt the twosome view, and there is much to be said for it. But in actual practice it will be found advisable if we select this arrangement to carry on under the condition that the two members make a point of being apart from one another for a couple of hours each day. Some people protest against this condition, and give examples of how "Miss So-and-So and I toured among the Dolomites for eight weeks last summer; never got tired of one another, and came back closer friends than ever." Now there *are* people in the world like that, thank God! But not many. So it is natural that three forms a more popular combination, the reason being that in such a group there is room for resting from the reactions of personality. *A* can rest himself from *B* by falling back on *C*, and *B* can get a rest from *C* by turning on to *A*. The danger of this triple arrangement is the possibility of any two of the members making a too firm combination and leaving the unfortunate third out in the permanent cold. In the case of the fourfold arrangement there is an increased danger of a permanent splitting off into two pairs.

THE ATOMIC PSYCHE

All this suggests a sort of atomicity in social psychology that is worth at least a passing consideration, though it is not to be taken too seriously. The atom is naturally the psyche. It is the irreducible unit beyond which we cannot go, which is the position the atom used to occupy in chemistry. It is true that the revolutionary changes in chemical theory have changed all this. But though the atomic theory is now in a precarious state; it is so thoroughly embedded in the popular imagination as the result of generations of teaching in our schools and colleges that it has still value as an expository device. It represents truth though not the whole truth, and may therefore be used if readers are warned that it is no longer taken literally.

We have seen that there is as natural a tendency for the psyche to form combinations with other psyches as there is for the atom to form combinations with other atoms. We were taught as boys that atoms were not content to exist merely as atoms, they wanted to join with other atoms so as to form compounds called *molecules*. To us youngsters this seemed eminently reasonable. We felt the need of chums ourselves, and were willing to grant the same satisfaction to the atoms. What worried us a little was the fact that our teachers brought to our notice that if a stray atom could not find a suitable atom of some different element with which it could form a molecule, it took up for lack of a better with an atom of its own element. We could understand an atom of carbon seeking out an atom of oxygen to form a molecule CO, but we did not see much sense in two atoms of carbon getting together to form a molecule labelled C_2.

But this peculiarity lends itself to increase the applicability of the atomic theory to illustrate the combinations of the social elements. It is true that the social unit, the psyche, is not so desperately in need of company as the atom, for the psyche, we have found, possesses in its own nature a duality that prevents absolute loneliness. All the same, the psyche cannot remain permanently aloof from others. We have found it to be inherently sociable. Fortunately there is an abundant supply of psyches ready to make up partnerships with one another. From the peculiar nature of the case none of these separate entities save the one whose point of view we adopt is entitled to be called an ego. Let the reader take his own ego as the unit. All the other egos in existence are not egos to him. Each of them *to him* is not an ego but an *alter*. The unchilled meaning of this Latin term is *the other fellow*. The ego and the alter, or in less austere terms, "you and the other fellow," may be treated as social atoms, and combined for the time into a whole that may be regarded as a social molecule.

SOCIAL MOLECULES

We could go on calling this social compound a molecule. But there is danger of confusion and misunderstanding if we adopt this term that has been so long used in another connection where it has a definite technical meaning. So we had better look out for a distinctive term. There is one to our hand, and a respectable Latin one at that. It is not quite first hand, for it has been already used by a psychologist (J. M. Baldwin), who has given it such an obscure meaning as would require pages to elucidate. As there is no prescriptive right in technical terms we may make bold to appropriate this word, and that with a good conscience, since we are going to give it a comfortably simple meaning. Let us then use the term *socius* to stand for the social molecule. If the reader has a mathematical bent he may console himself by writing out the easy equation

$$\text{ego} + \text{alter} = \text{socius}$$

Following the abominable habit of new terms, no sooner is *socius* in the saddle in our service than it sets about expanding and including elements that seem to imperil its simplicity. The trouble arises from the grammatical number of *alter*. The ego can combine with more than one alter at a time, just as there may be more than two elements in a chemical molecule. This in itself does not introduce any troublesome complication, for we are familiar with the rather elaborate combinations that make up certain of our chemical molecules. Our treatment of the walking-tour unit has led us to expect a series of potential social molecules of increasing complexity. The grouping by twos, threes, or fours really suggests the binary, ternary, and quarternary molecules in chemistry, and the danger that we have suggested in the ternary, and that we find still more in the quarternary groupings, is that they may split it: in the one case into a binary molecule and a solitary atom; in the other, into two separate binary molecules.

The chemical connection of atoms into a molecule is much more permanent as a general rule than is the social combination. Throughout a given day our ego forms combinations with a great number of different social atoms. We belong in turn to a great number of socii (or *sociuses* if you prefer the English form of the plural) as we pass our day.

It will be noted that it is assumed that the ego makes and unmakes its connections with *alters* with much less formality than marks the combinations and decompositions in the chemistry classrooms. But the combinations are none the less real and important because of their transitoriness. Of course, the socius varies greatly both in regard to the number of elements combined and in regard to the permanency of the combination. On the chemical side the normal combination is regarded as permanent, whereas on the social side the normal state is one of temporary combination. Three strangers talking in a railway compartment form a socius, as much as do three cronies dining at a club as their custom has been for years. Further, the content or the extent of the socius varies enormously. In a way the three cronies may be multiplied by twenty, forming an organized club where threescore men dine once a week, and still the group may be called a socius. Each of the branches of the Rotarians, Kiwanis, Lions, Elks, Buffaloes, and other members of the social zoo may be said to be a socius, especially since they all form units, collective units if you will, that can be united to form a big social combine.

But perhaps it will be better to keep the size of the socius down as much as possible, and leave for the general term *crowd* the massing together of unorganized gatherings of people. Collective psychology, in fact, falls into two sections, the one dealing with the interactions between individuals as such or *in small groups,* and the other with the big unorganized combinations of people. To the first the name Social Psychology may not unfairly be attached, while Crowd Psychology would cover the wider and looser range. Professor William McDougall's work on *Social Psychology* would be an example of the first type, and Gustave LeBon's *Psychology of the Crowd* would exemplify the second. The extended socius that includes a score or more of members would occupy a place between the two, with a bias toward the crowd concept. It may be marked off by the limitation that it should not be applied to any group of persons that is not thoroughly organized and that does not fulfil the condition that all the members know each other by name, character, and reputation.

CROWDS

All this discussion shows that there are many kinds of collective bodies that must be taken into account when we set out to study the activities of human beings in the mass. The very limitation suggested by the adjective *human* in the last sentence suggests that this collective psychology need not be limited to persons. We have a phrase that is getting very popular and that can be applied to human beings, though its origin is with quadrupeds. When we speak about the "herd instinct" we speak of something that is of importance to us, since we share it with the creatures that we are accustomed to label as "lower." Since we have limited ourselves to the psychology of humans, we need not go afield after quadrupeds, though we may now and again learn something from the reactions of these four-legged creatures when they act in bulk.

But even within the limits of humanity we find all manner of different kinds of crowd demanding our attention. The ordinary meaning attached to the term *crowd* is a more or less fortuitous gathering of human beings without any organization. But any big gathering of people may be fairly called a crowd, even though there is a certain amount of organization involved. The congregation of a church involves a fairly high degree of organization, compared, for example, with the audience at an ordinary performance at a theatre. The members of a musical association who are subscribers to a series of public concerts form at each performance a loosely organized crowd. The members of the Congress of the United States make a fairly well organized crowd. A class in school forms a special type that is catalogued by collective psychologists as a homogeneous, non-anonymous crowd. The common crowd that gathers in the streets of a city when something of general interest occurs without any previous intimation is a typically heterogeneous, anonymous crowd. Such a crowd is made up of a swarm of individual egos on the loose but welded together for the time being by some common interest. This is the kind of crowd that originally attracted the attention of psychologists and set them studying the interaction of individuals on each other and in the mass.

We seem to have suggested quite a sufficient variety of crowds, but there is still another kind that has a queer questionable existence that would have roused the interest of William of

Occam, if it had been brought under his notice. This may be conveniently called the invisible crowd. For there are certain social organizations that bring together, in a spiritual way, great numbers of psyches whose bodies never come into direct contact with each other. An example may be found in the circulation of any long-established and well-organized newspaper. These readers never get into physical touch with one another, and yet by daily reading the same sort of news presented in the same way and from the same social and political angle, they acquire a common background against which they project the various incidents of their daily life, and in this way form a sort of distributed personality that has a quite definite influence in the big unit of population through which its members are scattered.

Another example may be found in the electorate. Seldom indeed is it possible for a whole electorate to meet personally in order to make their choice of officials after the fashion of the old Anglo-Saxon *mote*. Yet near election times there arises a sort of distributed body of opinion that tends to develop two shadowy collective personalities in which the two sides (I am assuming a two-party organization) vaguely seek to embody their hopes and fears.

Taking a wide view of the whole subject, we have the following gradations: first, the individual corresponding to the atom; secondly, the socius, corresponding to the chemical molecule, limited to small well-organized groups within which each member is well known to all the others; thirdly, a great variety of groups of people organized to a greater or less degree; fourthly, groups of separate persons who never meet as a whole but form a sort of psychic unity; fifthly, fortuitous groupings of individuals gathered together unpremeditatedly by some common interest. This last may be accepted as the most primitive form of the crowd and therefore provides the best starting point for the general study of crowd activity.

The popular view of the relation of the general crowd to organization becomes clear when we note the ordinary use of language on the subject. A meeting may be summoned with all the pomp and circumstance of posters, advertisements, and even cards of admission, and yet in the middle of the proceedings the whole affair may break down into what the newspapers describe as "a mere disorganized crowd." It is true that the reporters, if they get the least encouragement, are inclined to speak of a *mob* rather than a crowd, and those who are opposed to the purpose for which the meeting was called will certainly use the shorter word. The hostile reporters do not usually recognize that in using the opprobrious word *mob* they are really using a contraction for a Latin adjective of contempt applied to crowds. Our schoolbooks have told us that the word *mob* made its first appearance in England in the reign of Charles II, because of the frequency of crowd disturbances during that picturesque period. The Latin words *mobile vulgus* were freely used by the governing classes of that time as being even more contemptuous than their English equivalent, "fickle crowd." This fixing of *fickleness* on the crowd as its essential characteristic raises the problem of the psychology of the crowd as crowd.

If, as we have seen reason to believe, the crowd acts in a way that would not occur to the individual members making it up, there must be some reason explaining this difference. A simple, not to say naïve, suggestion is that the difference is caused by the fact that in a crowd the actions of individuals are not under observation, and that accordingly people do what they would not care to do if there was a good chance of there being witnesses who might afterward turn out to be troublesome. But it is asking too much to expect us to believe that the savage things done by a crowd have resulted merely from supposed freedom from observation. Cases occur, no doubt, of sly persons taking advantage of the disturbance caused by a crowd that has got out of hand, to break the windows of some shopman against whom they have a grudge, or to do something equally spiteful and petty. But such a seeker for revenge is not a part of the crowd at all; he is not swallowed up by it and driven by its collective impulse. He is quite calm and unmoved by the prevailing collective spirit and uses the excited crowd as a stalking horse behind which he can do his contemptible little deed. The crowd as such is dominated by a common feeling that influences all its members in a greater or less degree. No doubt in every crowd of any size there are to be found cool, calculating persons who unostentatiously use the crowd for their own private ends. But we must look for a bigger influence than the desire for pettifogging social sniping under the shield of temporary social anonymity. We need a positive force, not a merely negative one.

THE FORCE OF IMITATION

In a formidable work called *Les Lois de l'Imitation,* Gabriel Tarde believes that he has discovered this force in *imitation.* It cannot be denied that this force counts for a great deal in crowd reactions. The tendency to imitate is fundamental in human nature; we cannot escape it. Whether we will or no, we naturally tend to act after the pattern of others. Probably this tendency has a psychological basis, and no doubt it has served to facilitate the development of humanity, without individuals being quite aware of its existence. Indeed, some of the newer psychologists try to limit its range by showing that what is often regarded as imitation is merely the common way we have of doing things after the same fashion, of meeting certain situations by an appropriate reaction. By all doing the same thing in the same way at the same time we may convey the impression that we are imitating each other, though each of us may be only following our natural bent. If this be true it will strengthen Tarde's view of how collective action is organized. It need not greatly concern him whether we call certain actions imitative or not.

In any case, what we usually call imitation is not necessarily carried on wittingly. We keep on imitating all the time without realizing that we are imitating. On the purely physical plane we have examples every day of this involuntary imitation. It has become a commonplace of after-dinner conversation to remark on the ease with which an involuntary yawn by a passenger in a trolley car will set off all the other passengers yawning, and some of us have had the amusing experience of seeing the whimsical after-effects in the form of the immediate discomfort caused among the dinner conversationalists in their attempts to smother the yawns that the talk on yawning had suggested.

The working of imitation as a social force will be readily understood by a reference to what has been said in the chapters on "Paid-up Psychic Capital" and on "Suggestion." In the first of these chapters we have an account of how the material is collected that makes imitation effective, and in the second we have the mechanism by which it is brought into play. The action of some outside person or object by force of suggestion acts upon our paid-up capital so as to produce a corresponding activity. The working of the process was well illustrated by an incident that occurred in a railway compartment in which I found myself in my student days. There were four of us students at the window at one end of the compartment while an old gentleman sat at the other end reading his newspaper. We youngsters were discussing the theory of beauty, and after the manner of our kind were none too quiet about it. One of us propounded the doctrine of a German critic who maintained that the standard of beauty of the human nether limbs demanded that the ideal person should be able to keep in place, when standing upright, a coin of one inch diameter between the knees, the calves of the leg and the ankles, three coins in all. As the discussion went on, the old gentleman got up and started manipulating his window. But I soon saw that the window was not at all his centre of interest. He was bringing his legs together and trying to determine whether he could keep a coin imprisoned in the three required places. Literally, there was no model for the old gentleman to imitate. None of us students had got up to perform the experiment. But the implied example was enough to set suggestion in motion, and the result followed, probably a little to the annoyance of the old gentleman if he supposed that any of us guessed the underlying motives of his window manipulation.

It is clear that imitation may readily account for the beginnings of crowd action and for the volume of activity in one direction that frequently marks it. A sort of circular activity is often set up in a living organism by the repeated imitation of some action. Thus a dog may begin by scratching itself in a reasonable way, but by steady repetition of the process he may set up a circular reaction that he finds it difficult to stop, and may even have to wait for exhaustion to bring relief. So in the crowd we may have a repetitive process that is plainly pathological. The crowd at Ephesus that for the space of two hours kept chanting, "Great is Diana of the Ephesians," supplies a case in point. Some of us may recall similar cases in university halls during commencement or graduation ceremonies, when some particularly rhythmical slogan got hold of the students.

Imitation certainly accounts for some of the phenomena of crowd reaction, but it does not at all explain the complete difference of the tone that often marks the crowd as compared with that of the individuals who make it up. What is the cause of the exaltation or the degeneration of the collective spirit as compared with the normal state of the individuals involved? We must try to work out the parallel between the atoms and the chemical mixture with the corresponding total difference in kind.

To this end make the simple experiment of taking two sheets of foolscap paper and writing on one of them all the points in which you resemble William Shakespeare, and on the other all the points in which you differ from him. It will be found, probably to your surprise, being the modest person that you are, that you resemble him in vastly more points than you differ from him. It has to be conceded that the points in which you differ from him are somewhat important; but, all the same, you cannot but realize that you are far more like him than you are different from him. When we look more closely into the two lists we discover that the points in which you resemble him are made up for the most part of those in which you resemble other people of all sorts.

This trifling experiment has been suggested to you in order to draw your attention to the great body of resemblances among human beings. In a general way all our qualities may be said to fall into the two groups—those that belong to us as individuals and thus mark us off from our fellows, and those that we share with all humanity. No doubt we have a borderland group of qualities that do not belong to us as individuals and yet are not shared by all humanity. They belong to us as members of special groups—our fellow citizens, fellow craftsmen, fellow religionists; and when we find ourselves in crowds made up of such "fellows," then civic, craft, or religious considerations influence us strongly, strengthen our interest in these matters, and tend to confirm us in the way we have acquired of looking at them.

THE INDIVIDUAL AND THE CROWD

The degree in which we possess certain qualities is another source of differentiation. So we can readily understand that in a great miscellaneous crowd there is a conglomeration of the most widely differing qualities. Our fellows in the crowd represent all sorts and conditions of men, who bring to the crowd the whole of their special knowledge as well as the knowledge and qualities they have in common with all the rest. The members of the crowd are not there as accountants, bookkeepers, chemists, lawyers, realtors, schoolmasters, auctioneers, stamp collectors. They are there simply as human beings, so the appeal of the situation is purely the appeal to human beings as such. No doubt it is impossible to get a considerable body of people together for any purpose whatever without finding among them certain individuals who have a social interest in the matter that immediately concerns the crowd in question. But in the purely fortuitous crowd the number of people with individual personal interests connected with the matter that has called them together is so small that it may be neglected. If we find ourselves in such a crowd we must realize that all our fellow members of that crowd resemble us in a number of points far greater than the number of points in which they differ from us. So we must be prepared for the natural result that our contacts are all necessarily made within this zone of common elements.

We have all a tendency to feel superior in a crowd, the explanation being that by mere inspection we see so many who are obviously our inferiors that our inference is not unnatural. We do not usually look with the same zest for our superiors in the crowd. But the truth is that the man who seriously looks into his own status in a crowd is almost certain to be considerably above the psychic average of the crowd, as is suggested by the very fact that he has thought of putting the question to himself. The comparatively few thoughtful people who happen to be in a miscellaneous crowd are probably right in regarding themselves as at least above the average in intelligence. But the moment the crowd gets going in any direction the tendency is toward levelling—usually downward. The appeal of the crowd atmosphere is not to the literary, the artistic, the intellectual, but to the big broad general qualities that characterize the human race as a whole—what may be called the universal elements. Now these general elements are often called primitive, for they are not only universal but have always been so, and go back to the beginnings of the race. These tendencies are most likely to seek the most direct route to wherever they want to go. The more educated members of the crowd, as their friends would call them ("the more sophisticated" would be the name given to them by their enemies), are accustomed to consider matters from a good many different points of view, and to hold their decision in reserve for future consideration, but have very little chance to follow their usual custom when they find themselves in the midst of a crowd.

When the crowd spirit begins to develop a curious double process sets in. There is a clash of psychological elements, and we have a struggle not unlike what takes place in the interaction of individual concepts within the dome of consciousness. The universal and the particular elements naturally fight for the mastery. But it is an unequal struggle. All the universal elements tend to fuse with one another, leading to a general strengthening of the elements in question. No doubt the individual personal elements do their best to fuse with similar elements in cognate personalities. If there be a big number of strongly individualistic persons within reach of each other in the crowd they may be able to do something to resist the pressure of the primitives.

but in most cases the universal elements assert themselves rapidly, and the individualists are swept off their feet.

Naturally, this inhibition of the special elements in the psychic make-up of the individuals in a crowd is only temporary. Once the crowd is dispersed the collective influence is lost; the individual comes to himself, and is able to estimate how far astray he has been led by influences from without. It is not unusual for an observant person to note the coming on of symptoms of crowd influence, and some have the discretion to get out of the crowd before its influence becomes overpowering. A conservative old lawyer of my acquaintance was seen on one occasion, not walking, but running from a Salvation Army meeting, and when called on by his friends for an explanation said that he found the prevailing excitement so contagious that if he had waited a minute or two longer he was sure that he would have found himself sitting on the penitents' bench confessing his sins with the best of them. So a staid non-sports professor friend of mine incautiously went one day to see an intercollegiate football match in which his students were concerned, and to his mortification discovered himself yelling, "Attaboy!" as vehemently as the most blatant of the boys.

The Salvation Army crowd and the football crowd mark a stage a little more sophisticated than the natural raw crowd that comes together more or less by chance and has no form of organization at all. There is little organization in a Salvation Army crowd, for the mere quality of being sinners is hardly enough to differentiate such a group. The football crowd has at least the organization involved in the differentiation between the home team and the strangers. Sometimes the organization goes much farther, and the yelling and other ceremonies do introduce a sort of differentiation that clearly divides the spectators into two distinct crowds, each having a personality of its own. This matter of the personality of a crowd raises the same sort of problem that arises in connection with the soul of a city or a state. In the earlier editions of Thomas Hobbes' *Leviathan* we have a picture of a man representing the state, each part of his body being labelled to indicate what part of the government it carries on. Some critics are very severe upon this form of illustration and maintain that the only way in which a corporation can claim to have a personality is by acquiring a real body in which to house it. The fallacy of this criticism is that to which we have already referred when we pointed out the danger of carrying a metaphor so far as to leave nothing but the literal elements on which it is founded. Figuratively a crowd may claim to have a personality, as is proved by the adjectives men have used in describing it. But personifying the crowd does not seem to get us any nearer the solution of the problem of regulating it.

THE DEMAGOGUE

The raw crowd, the fortuitous anonymous variety, would seem to be beyond all control short of machine guns or their milder equivalent, the cold water hose. Yet there do seem to be possibilities of controlling it, else why the word *demagogue?* This raises the problem of the mob leader, with its preliminary query: Which comes first, the mob or the leader? For in sober truth there may be no mob at all till the demagogue gets his hand in. There may be a gathering of people, right enough, but the welding of them into a psychological unit may be left to the influence of an outside force, which may be either a person or a circumstance. Things may happen in such a way that a vast gathering of people may suddenly develop into an infuriated collective personality that demands satisfaction. Out of its own body it may throw forth some individual who in his single person gathers up the spirit of the many-headed monster and gives it the direction it needs. In such a case the demagogue is really the servant of the mob which has created him.

On the other hand, the demagogue may come along, find the assembly of people waiting in neutral silence, and may thereupon attack it, and by his eloquence stir it up to a pitch of excitement in which calm reasoning gives way to a collective impulse that stifles individual thought and leaves the unified mass at the disposal of the orator who has given it a collective unity.

The word *demagogue* is usually employed in an unpleasant way. It carries with it a certain reproach. But there are types of crowd leaders to whom no reproach attaches. Who could be more blameless than a clergyman in his pulpit, and yet he does professionally, and with high public approval, the same sort of work that is roundly condemned when undertaken by persons called *agitators*. Psychologically the statement is warranted:

Pastor : congregation :: demagogue : mob.

When the clergyman ascends the pulpit he finds his congregation already in the state of a psychological unit. The previous part of the service has seen to that. Prayer and praise have put the congregation into a psychic state of preparation, so that everything is easy for the preacher. Unfortunately, it sometimes happens that with the sermon comes a rapid disintegration of the collective unit that was the congregation. Under the influence of the music, the architectural environment, and the refined language of a church ritual, the congregation has been worked up into an ideal collective personality. But the inferior clergyman sometimes by his first sentence or two reduces the unified congregation to a group of so many hundred individual psyches groaning under platitudes and longing for the *amen* that will bring release. On the other hand, the genuine leader of men steps into the pulpit and manipulates his unified congregation as skilfully as his organist does his instrument.

The conductor, with his huge well-trained orchestra, represents a crowd leader with a still better organized collective unit. Nowhere else in the world, perhaps, can we find a more satisfactory illustration of the perfect type of demagogy in its uncontaminated sense.

Army discipline has fallen into disrepute as exemplification of man-leading in its psychological meaning. But the newer military discipline differs from the old largely in the substitution of psychic for bodily control. The *morale* of a modern army is the thing that counts. It is deliberately cultivated in a nation's own army and as deliberately attacked in the armies of that nation's enemies. A good deal of the work of a modern army depends on that spirit that we have seen may be cultivated among bodies of people who never meet one another in the flesh.

Some attempts have been made to classify the various forms that the crowd has taken, but the subject of collective psychology is still in such an undeveloped state that little would be gained here by a discussion of these attempts. It would only lead to a little quarrelling about terms referring to matters that have not yet been sufficiently mastered to enable us to apply with satisfactory results the methods of formal logic. At this stage we must rest content with an examination of the more prominent types of the collective unit. Among these one of the most striking has not yet been mentioned, and yet it is of special interest. This is the jury.

PSYCHOLOGY OF THE JURY

Here we have an attempt made by society to apply the most general of collective units to the special work of administering justice. It has to be admitted that the jury is not quite fortuitous in its make-up. Its members are chosen on the general principle of being the peers of the person who is on trial, little as the jurymen may like to be labelled the peers of the scoundrel who occupies the dock. Further, it is not anonymous. Yet it is selected so as to include representatives from all grades of the general public. Formerly it was still more simple than it is to-day. For we can no longer use the phrase so popular with novelists when trial scenes come into their books: "the twelve good men and true." But the inclusion of women is only a move in the direction of making the jury a genuine representation on a small scale of the big general public. Yet, however general the jury body may be in its representative capacity, its function is reduced to the lowest possible terms.

The members of the jury are limited to one particular form of psychic activity. They have to confine their range to one of the three great departments of psychology—the cognitive. Further, within that department they have to restrict themselves to one branch, the logical. It is an unusual way of looking at a dozen jury members as a set of logical automata, and yet that is what a jury resolves itself into, in the last resort. For its whole business lies in performing one solitary logical function—the act of judgment. This term is apt to call up visions of a judge in all his ancient glory of scarlet gown and white wig or black cap. But judgment in logic is a much simpler affair than that conducted with such pomp and circumstance in a courtroom. In plain English, logical judgment means nothing more than the decision whether a term is or is not included in a particular class. All that judgment implies in logic is the determining whether *A* is or is not included in the class *B*. All the jurymen have to do is to say whether the accused John Doe is or is not included in the class of guilty persons.

It has a flattening effect on the twelve jurors to be told that their whole function lies in the application of a principle that at least some of them have come across in a textbook in school or college. Yet that is all there is to it. Most jurors have no idea of this limitation of their functions. They come to court full of all manner of grandiose notions of the importance of their functions, and in general terms they are right. Their fundamental function could not be more important than it is. Their error is in mistaking the non-essentials for the essential. The judge usually does his best to make them realize the limits of their function. But how many jurymen who hear the judge's cautions in summing up realize that he is telling them that all they have to do is to perform a simple exercise in formal logic?

The jury is made up of living human beings with all the emotions that give life its zest. But in the jury box they are invited to leave all the picturesque elements out of account. From a dozen palpitating psyches they are called upon to turn themselves into twelve staid and unemotional thinking machines. The jury box must cease to be a psychological area and become a logical one. These devoted twelve are called upon to cast themselves loose from the ordinary modes of their personal psychology and limit their activities to the arid plains of formal logic. In an English court, at any rate, the judge is always at particular pains to warn them that their sole business is to come to a conclusion on the one point—does the evidence show that John Doe falls into the class of *guilty,* or does it not? On the other hand, the lawyers both for the prosecution and for the defense have no scruple at all in introducing every manner of psychological material, and make all kinds of emotional appeals. When they have done, however, the judge in his summing up takes care to brush aside all such extraneous matter and calls back the jury to their real business, the reaching of a logical decision whether the man John Doe does or does not fall within the class of those-who-are-guilty.

There is here, in fact, an attempt to have a collective unit that will be impervious to all the influences that usually dominate the members of a group of human beings. Everybody knows that as a matter of fact juries are swayed by all sorts of considerations that are theoretically eliminated from their minds. A dominating personality may sway the decision of the weaker members and lead to a verdict that is not at all in keeping with the evidence. There is the famous case of the Trial of the Bishops in the reign of James II of England, when one of the jury, holding up his churchwarden, remarked that if he had to starve there till his portly body became as thin as this pipe shank he would vote only one way. Honest sentiment, friendly or hostile prejudice, fear of public opinion or of the power of important outside people, may all have a determining influence on the decision. If it were a mere matter of logical process there would be little difficulty in the jury reaching a true decision. We have seen that John Locke justified his statement that honest men cannot come to different conclusions from the same premises; but we have not forgotten that one of his three conditions was that there should be no bias, whereas in point of fact bias is prominent among the jurymen, and even the most honest among them feel its influence; some of them feel it so much, indeed, that they occasionally vote against their sympathies so as to make sure that if they err it shall be at least on the side of fairness.

The important practical point is that on the whole the jury system "works," and experience seems to show that when it does go wrong the cause is emotional, not intellectual. The experience of the French bar appears to supply conclusive evidence that it is not through lack of intelligence that juries go wrong. In the old days in France the defending advocate was granted the right of rejecting from a proposed jury anyone he pleased, and that without giving any reason for the rejection. Accordingly, when an advocate had a bad case he set about rejecting all the intelligent-looking persons suggested so that he might have the less difficulty in getting the remaining stupid-looking jurymen to come to his way of thinking.

The instructive point for us is that by and by the lawyers gradually began to give up this privilege of rejection, their reason being that it made no difference to the decisions—the stupid-looking jurors giving just the same sort of decisions as those who looked more intelligent. This comes as no surprise to us who have realized that the work of the juryman is a bit of practical logic. We saw at a very early stage in our discussions that the Laws of Thought as Thought cannot be broken, even if we try to break them. So if the juryman goes wrong we cannot blame it on logic, and must fall back on psychology for an explanation. The business of the foreman of a jury is to keep his jurymen on the purely logical plane, and to prevent psychological influences from creeping in. He must carry into the room where a decision is to be reached the warnings that the judge has addressed to them when he has summed up the case. The foreman of the jury is a sort of mob leader, but his procedure must be exactly the opposite of that which marks the type usually called a demagogue. The foreman is in fact a sort of negative leader: he has to ward off those psychological influences that it is the business of the ordinary demagogue to stimulate.

On the commercial plane we can find vivid examples of this use of psychological methods that are quite out of place in the jury room. Perhaps from the highest point of view the skilful auctioneer is not entitled first to turn into a psychological unit the potential buyers who gather in his room. Yet with the justification of the warning we have already considered, *caveat emptor, Let the buyer beware,* he sails in and provides an admirable example of the working of collective psychology on a purely commercial basis. Under his tongue and hammer the "prospects" who are present are welded into a collective unit from which prices are drawn out that could not have been extracted under any system of calmly reasoned bargaining.

Every now and again, on an ocean liner the sale of the tickets representing the estimates of the ship's probable run for the day falls into the hands of a man who is a demagogue in the blameless sense, and the passengers are treated to a display of collective psychology that is in the highest degree instructive and entertaining. In most cases such a salesman disclaims all knowledge of psychology, individual or collective; but if you get into a quiet talk with him you will find that he is often able —though it must be admitted that this is not always the case— to lay down some rather effective generalizations. Sometimes, however, he is unwilling to talk about the matter at all, in which case he provides an example of a type of practical psychologist that is increasing rather than diminishing in numbers. We are so accustomed to find psychologists eager to talk of their subject, and to rush into print the moment they have made anything approaching a discovery, that we hardly appreciate the fact that a man with a keen eye on the main chance may not see his way to spread broadcast the results of his study of mankind. People of this type of mind and disposition are not often seen in psychological classrooms, though of late some of them are finding their way there, encouraged by the success that seems to be attending the study of industrial psychology. The ordinary business man, however, who has acquired a knowledge of practical psychology in the hard university of business experience, is inclined to keep to himself whatever he has acquired, or to communicate it only to his son who is to succeed him in the business, or at the most to the senior managers, salesmen, and others whose use of the knowledge will be likely to aid in the further development of the business of the firm.

But the selfish business man need not worry about communicating whatever psychological knowledge he may have acquired. It is the application of this knowledge that counts, and the experienced business man is the only one who can make full use of psychology from this angle. Business men make rather unreasonable demands from this standpoint. I am reminded of the comments of a very successful big-business man who happened to be chairman at my first lecture of a series on "Commercial Geography" that I gave as a very young man. He said in effect that all I had said about the productions of the various countries, trade routes, different coinages, and so forth, was very interesting, "But if Mr. Adams would set about supplying business men with lists of places where their goods are at to-day's date wanted at a good price, I would excuse him from worrying over all that technical stuff." My reply was that if I could produce a list of the kind he required I would be calling on him at his office and on his friends at theirs to the tune of one hundred pounds per business call, instead of giving courses at a guinea a lecture.

INTERNATIONAL PSYCHOLOGY

This reference to world geography fittingly introduces the problem of the application of collective psychology to the relations between nations. In dealing with the shadowy personalities of psychological groups of individuals who never meet in the flesh, we had a queer feeling that we were dealing with a sort of real existences, though we could not by any possibility succeed in materializing them. The same sort of feeling arises in connection with the nations of the world. More than ever before, however, we seem to be in touch with other nations as persons. The cartoonist has here done his fair share of the work. His characterizations of the different nationalities give the popular mind something to go upon. Nearly always, no doubt, there is a tendency to make the types of foreign nations anything but attractive. But of late there seems to be an amelioration of this ugliness. It is found that when we are on friendly terms with a nation its cartoon type becomes noticeably more agreeable. With the spread of communication there should arise a better understanding among the nations, which will certainly be one of the compensations for the levelling process that is reducing the world to a state of depressing uniformity.

Formerly the picture of a mob in Madrid could be readily distinguished from a picture of a mob in Berlin or in Amsterdam. But now we are not quite sure of even Constantinople, where formerly the fez was a sufficient landmark to keep us straight. The cinema and the radio are doing much to bring the nations closer together. It is a great thing to be brought into touch with other nations by means of the press, but when we are able to look at them through "the pictures" and hear them through the radio we have a greatly increased chance of getting to know them as they really are. A French psychologist wrote a valuable volume on the psychology of the European peoples, and a German wrote another on the psychology of nations. Neither book is yet an old one, but they must both be regarded as already out of date. We know the personalities of the nations in a way that we could not possibly know them when Alfred Fouillée and Wilhelm Wundt wrote their books. Perhaps the best way of dealing with the change is to say that all the new developments are enlarging the sphere of the secondary ego. By being brought into direct communication with our fellows in all parts of the earth, we are able to project ourselves to distant lands and join up our ego with all sorts and conditions of other egos. Whether we will ever be able so to unite our ego with suitable groups of cognate egos as to form a collective personality is an attractive but difficult problem. The temptation to toy with the notion of a genuine city personality, or even a national one, is very alluring. But from the dim past comes the warning note that we must not multiply entities beyond necessity, and we can hardly claim that a collective personality is an actual necessity, though the idea may be a useful one and may help us to understand each other better and to spread a spirit of greater friendliness throughout the world. Here the shade of Occam seems to hover over us so as to suggest that this is an excellent point at which to end this chapter—and this book.

THE END

INDEX

INDEX

Aboulia, 257.
Abstraction, 127.
Accommodations, 186.
Actions and experiences, 23.
Addison, 336.
Admonition, Mark Twain's, 204
Affective, the, 108, 366.
Alter, 398.
Anabolism, 162.
Analogy, 55.
Aniameter, 245.
Anisic attention, 222, 236.
Anoetic, 302.
Anstey, Fred, 356–7.
Anticipators, The Great, 188.
Aphasia, 35.
Apperception masses, 90.
Appreciation and reverie, 361 ff.
Arabian Nights, 359.
Aristotle, 47 ff., 66, 105, 391.
Arnold, Matthew, 29.
Arrest, 110.
Association, divergent and convergent, 267–8; laws of, 105, 267; secondary laws of, 106–7.
Atomic ideas of Herbart, 99.
Attention, nisic and anisic 222 ff., 236; physical accompaniments of, 221 ff.; spontaneous, 223.
Auto-suggestion, 270, 286.
Average, the, 164.
Awareness, 11, 160; and "habit," 179.

Backgrounds, 277.
Bain, Alexander, 286, 296.
Baldwin, J. M., 156, 157, 267, 398.
Barrie, Sir James, 3, 68, 390.
Barton, Bruce, 14.
Beauchamp, Miss, 67.
Behaviour, science of, 20.
Behaviourists, 21; attitude toward introspection, 24.
Bell, Lady, 246.
Bell, Sir Charles, 372.
Bennett, Arnold, 206 ff.
Benson, A. C., 240.
Bergson, Henri, 386.
"Boiling over" theory of emotion, 366.
Bore, the merciless, 239, 244; public speaker type of, 240; schoolmaster as a, 242–3.
Boredom, 230 ff.; active and passive, 242; lowest rung of, 236; positive, 233; relief of, 245 ff.; second chapter, 243; signs of, 241.
Boree, 242.
Boston, 78.
Boulometer, 257.
Brain, the, 15; old and new, 16; relation to habit of the, 180; relation to mind of the, 135; upper and lower, 237.
Broca and brocal region, 35.
Brown, Dr. Thomas, 106.
Browning, Mrs., 39.
Browning, Robert, 350.
Buffon, 37.
Bunyan, John, 139.
Burns, 77, 84, 239.
Burton, 152.
Butcher and Lang, 14.
Burbank, Luther, 201.

Capek, Karel, 212 ff.
Caprice, 264.
Carter, Huntly, 211–12.
Cartesian view, the, 170.
Censor, the, 349 ff.
Chalmers, Dr., 99.
Chameleon stage, 392.
Character, 69 ff.
"Characters," 166.
Chemical analogies, 393.
Choleric temperament, 151, 158.
Clough, Arthur, 76.

"Cog" work, 237.
Cognitive, the, 108.
Coleridge, 360.
Comenius, John Amos, 283.
Complexes, 90, 109; inferiority, 382.
Complication, 109.
Compounds and mixtures, 393.
Conative, the, 108, 259.
Concept, 142, 343; as dynamic, 144; distinguished from idea, 126; logical and psychological, 127.
Conception and perception, 135, 147.
Condillac, 145, 215.
Configurationists, 27; application of theory of, 29 ff.; relation to behaviourists, 33.
Confrontation, 298 ff.
Congruity, 107.
Consciousness, 10; a purely private matter, 20; as epiphenomenon, 27; as obstruction, 17 ff.; as storm centre, 86; defense of, 12; dome of, 59; escape of, 181; Huxley's elimination of, 11; manipulation of, 218; misplaced, 174; stream of, 53; threshold of, 59.
Contiguity, law of, 105.
Continuum of ideas, 106.
Contrary ideas, 110.
Contrast, law of, 105.
Convergent association, 267–8.
Coquelin, 370.
Coué, 270 ff.
Coué-ism, 287.
Cramming, 187.
Cranmer, 62.
Creative work, 188; and knowledge, 190.
Cross-examiners, 322.
Crowd psychology, 394 ff.
Crowds, types of, 401 ff.
Curtis, 321.

Darwin, 372.
Dated memory, 323.
Daydreaming, 239, 353 ff.; justifiable, 358, relation to processes in, 360.
Deduction and induction, 292 ff., 316.
Deduction, basis of, 294.
Definition, 289.
Demagogue, the, 410 ff.
De Morgan, Augustus, 229.
Deperr, 211.
Descartes, 12, 76, 168, 379–80.
Desire, 97, 108.
Devil, education of, 279 ff.
Diderot, 370.
Differentia, 289.
Discovery and invention, 317 ff.
Disparate ideas, 109.
Disposition, 149; contrariant, 278.
Divergent association, 267–8.
Dodgson, Dr., 340.
Dome of consciousness, 59, 101.
Dooley, Mr., 227.
Doyle, Sir Conan, 52.
Dreaming, control of, 364.
Dreams, the study of, 348 ff.
Drudgery, 228.
Duchenne, 222, 371.

Edinger, L., 16.
Education, 133; span of, 140.
Ego, the, 63 ff.; bi-polarity of, 72; extended, 81, 129; our permanent guest, 76; split, 67, 351; that masterful entity, 75.
Egocentric, 84.
Egocentritis, 84, 275.
Egoistic and egotistic, 74.
Eliot, George, 50.
Emergence, 265.
Emerson, 244.
Émile, 175.
Emotion, McDougall's definition of, 380; muscular expression of, 372; nature of, 366 ff.; objectless, 375; place of, 365; synthetic, 375–6; the regulation of, 374; under war strain, 26.
Entities and things, 47, 48.
Environment, 145 ff., 147.
Epiphenomenon, 27.
Ergograph, 24.
Euclid, 318; axioms of, 291.
Excluded middle, law of the, 291.
Experiences and actions, 23, 25.
Experiential observation, 26.
Extroverts and introverts, 166 ff.

Faculties, 49, 136 ff.; respectability of 331.
Fairy tales, the case for, 336 ff.

Faith, 271.
Fatigue, 230 ff.; symptoms of, 241.
Fechner, 36.
Fell, Dr., 158.
Fichte, J. G., 176, 179.
Flash, the, 32, 309 ff.; the false, 312.
"Focussing," 219.
Fogyism, 184.
Fontenelle, 366.
Fouillée, Alfred, 157, 161 ff., 418.
Free will, 260 ff.
Freud, Dr. Sigmund, 88; his wish-theory, 348.
Froebel, 58, 140, 201.
Fruit, the psychologist's, 75.
"Fumble," index of, 295.
Fusion and arrest of ideas, 109–10; in crowds, 408 ff.

Galen, 150.
Galton, Sir Francis, 241.
Gaping point, 307.
Generalization, 127.
Genetic Psychology, 40.
Gentile, Giovanni, 312.
Genus, 289.
Gestalt theory, 27 ff., 99, 303.
Goethe, 77, 191, 198, 281.
Goldsmith, 37, 70, 233.
"Good old grinders," 227.
Greenough, Dean, 166.
Groping point, 307.
Growing point, the, 186, 266.

Habit, 175; and "awareness," 179; as labour-saver, 177; breaking of, 186.
Hall, G. Stanley, 102, 165.
Hamilton, Sir William, 37.
Hartmann, Edouard von, 86.
Hastings, Warren, 360.
Hegel, 297.
Helmholz, 24.
Heart-burning, 325.
Heraclitus, 17.
Herbart, J. F., 36; as precursor of Freud, 88 ff., 246; his classification of ideas, 109; his view of ideas, 99, 104.
Herd instinct, 401.
Hippocrates, 150.
Hobbes, Thomas, 192, 238.
Holmes, Oliver Wendell, 392.
Holmes, Sherlock, 42, 52.
Homer, 14.
Hood, Tom, 310.
Hume, David, 43, 56, 292.
Huxley, T. H., 11, 75, 76, 207.
Hypostasis, 48, 133, 166.

Ideas, as *forms* and as *forces*, 102; as living creatures, 59; as presentation, 100; description of the Herbartian mechanism of, 99 ff.; distinguished from concept, 126; dynamic side of, 102; having, versus realizing, 110; Herbartian classification of, similar, disparate, contrary, 109 ff.; Herbartian ratio of, 114; law of contiguity, 105; laws of similarity, contrast, redintegration of, 106; three processes of interaction—fusion, complication and arrest, 110.
Identity, law of, 291.
Image, and generalized image, 142, 343–4.
Imagination, as playing a lone hand, 338; former criticism of, 332; in relation to memory, 323; not limited to æsthetics, 332; the artistic, 339 ff.; the scientific, 341 ff.
Imaging, 342.
Imitation, 392 ff., 404; crowd effect of, 404 ff.
Imitative nature, 392.
Immediate recall, 111 ff.
Individuality, 69–70.
Induction and deduction, 292 ff., 316.
Induction, basis of, 294.
Inference point, 304; zone, 304.
Inferiority complex, 382.
Inner-outer, 140.
Inner world, 130; subjective, 132.
Instruction, 301.
Instincts, 380 ff.; and emotions, 384 ff.; and intelligence, 388; and reason, 387.
Intelligence and instinct, 385.
Interest, 225 ff.; Herbartian view of, 228, 246; relation to memory, 326.
Internal harmony, 297 ff
Interpretation, 79.

Introspection, 24, 26, 38; as a method, 73 ff., 80.
Introverts and extroverts, 166 ff.
Invention and discovery, 317 ff.
Iron man, the 209.

James, William, 53, 81, 133, 184–5, 369 ff.

Janet, 267.
Johns, the six, 393.
Jury, the psychology of the, 412.

Kant, 163, 176.
Katabolism, 162.
Kingdom of ends, 177.
Klopstock, 367.
Knowledge, 186 ff.; and creative work, 190.
Koffka, Kurt, 22, 24, 27.
Köhler, Dr. Wolfgang, 28, 290.

La Bruyère, 165.
Lamb, Charles, 153.
La Mettrie, 200.
Lange, Professor, 368–9.
Lange–James theory, 368.
Language check books, 199.
Lavater, 160.
Learning by rote and by heart, 324 ff.
Le Bon, Gustave, 400.
Life, 373.
"Lights," 313.
Listening, rhythm of, 219.
Localization of ideas, 35, 135.
Locke, John, 56, 57, 100, 130, 216, 414; on poetry, 333.
Logic, relation to psychology, 287.
Longfellow, 252.
Losharloshi, 212.
Lotze, Hermann, 78, 168.
Lovelace, 236.
Lymphatic temperament, 150.
Macaulay, 331.
MacCulloch's Course, 201.
Machine drama, 211 ff.
McDougall, William, 266, 379 ff., 400.
McDowall, R. T. S., 195.
Man as solitary, 390.
"Many-headed," the, 391.
Many-sided interest, 246.
Marinetti, 211.
Marlowe, 281.
Meaning, 301.
Mechanism, glorified in Italy and in Russia, 211; objection to, 208.
Mechanism of ideas below the threshold, 115 ff.
Median, the, 164.
Mediate recall, 111 ff.
Melancholic temperament, 151.
Mental content, 102, 134–5, 189.
Mental second wind, 25.
Meredith, George, 75.
Memorizing, 324.
Memory, the artificial, 327; the "brute," 326; working of, 323 ff.
Metaphors, 51 ff.; unfair use of, 315; versus the simile, 276.
Metaphysics, 72.
Mill, J. S., 277
Mind, 6, 53; mind-body, 7.
Mispronunciation, 315.
Mnemonic aids, 326 ff.; commercial, 330.
Mob, 403.
"Modes of being conscious," 137.
Montaigne, 7.
Montessori, Dr., 336, 358.
Morale, group, 411.
Morality plays, 166.
Morgan, Dr. Lloyd, 388.
Motive, the strongest, 258.
Motives, 250.
Motor temperament, 155; relation to sex, 156.
Müller, Max, 192.
Multipolar cells, 195.
Musical conductors, classification of, 22.
Myers, Dr. C. S., 41.
Myograph, 24.
Mysteries, 72.

Nerves, afferent and efferent, 154; elaborative and communicating, 154; relation to sex, 156.
Newness, the age of, 13ff.
Nisic attention, 222, 236.
Noesis, 302–3.
Noetic, 302.
Nominalists, 47.

Non-contradiction, law of, 291.
Non-ego, 66.
Nous, 302.
Novel-writing, 356.
Novelist, the, 243, 340.

Objective and subjective, 63, 132.
Observation zone, 305.
Occam, William of, 45, 57.
Occam's razor, 47, 89, 103.
Officina hominum, 284.
Originality, 188.
Outer-inner, 140.
Outer-world objective, 132.

Parallelogram of volition, 259.
Parlour game, 312; application of, 313.
Parmalee, Dr., 197.
Passion, 377 ff.
Paulhan, François, 367.
Percept, 142, 343.
Perception, definition of, 141; relation to conception 135, 147.
Personality, 68 ff.; etymology of, 71; multiple, 392.
Persons in grammar, 62, 63.
Petty, Sir William, 318.
Philosophy, outside claims on, 2.
Phlegmatic temperament, 150.
Phobias, 90; various, 92.
Phosphene, 64.
Phrenology, and pseudo-sciences, 18, 160.
Phrenometer, the, 304.
Physiology, the new, 15; relation to psychology, 33 ff.
"Pictures, the," 418; as illustration of wish theory, 359.
Plant metaphor, 58.
Plato, 46 ff., 53, 300, 333.
Poet, the, as maker and finder, 334; as truth-teller, 335.
Poetry, views of Locke and Plato on, 333.
Pope, 43, 387.
Posse non peccare, 264.
Pragmatists, 80.
Preaching, to machines, 202 ff.
Presentative activity, manipulation of, 114, 283.
Presented content and presentative activity, 101.
Priggishness, 172.
"Primrose pathers," 227.
Prince, Dr. Morton, 67, 68, 69.
Problem, the Euclidian, 319.
"Prospects," 272.
Pseudo-science, 17, 160.
Psyche, 5, 8, 37; Herbart's description of, 100; site of, 12; superimposition of, 147.
Psychiatrists, 71.
Psychiatry, 166.
Psychic, 8, 9; saving and spending, 183 ff.
Psychic force, 118 ff.
Psychical Research Society, 8.
Psycho-analysis, 42, 87 ff.; figures of speech of, 95 ff.; usually pathological, 93.
Psycho-analyst, typical den of a, 120.
Psychology, a study of human nature, 43; algebraic form, 382; collective and social, 41; definition of, 5, 9, 43; for private ends, 416; generic, 40; Gestalt, 99; international, 417; metaphor in, 51 ff.; occupational, 41; of religion, 6; popular use of, 4; professional claims on, 1, 2; relation to logic, 287; relation to physics, 36; relation to physiology, 33 ff.; the new, 14; three divisions of, 108 ff.

Qualities, primary and secondary, 130.
Quiller-Couch, 210.

Radice, Mrs., 13.
Reader, active and passive, 276.
Realists, 46.
Realizing an idea, 110.
Recall, mediate and immediate, 111 ff.
Recency, 107.
Reconciling our concepts, 297.
Redintegration, law of, 106.
Reflex action, 155.
Reid, Thomas, 37.
Relevancy, 107.
Repression of ideas, 97.
Reverie, 361 ff.

Robotesses, 214.
Robots, 209 ff.
Rote, learning by, 325.
Rousseau, 175, 336, 359.
Royal, The, 372.
R. U. R., 212 ff.; economics of, 214.

Sally, 67.
Sanguine temperament, 150.
Sarcinatorium hominum, 284.
Schoolmen, the, 45, 65, 72.
"Scientific management," 42, 236.
Sciousness, 10.
Scott, Sir Walter, 84.
Selenium dog, the, 216.
Self, 66 ff., 74; "our better," 351.
Selfishness, 82 ff.
"Selling," 275.
Selling, psychology of, 271.
Sencept, 142, 343.
Sensations, 138.
Sense impressions, range of, 118 ff.
Senses, preferred, 140.
Sensory temperament, 155–6; relation to sex, 156.
Sentiment, definition of, 379.
Shakespeare, 31, 196–7, 321, 406; seven ages of, 169, 365.
Shand, A. F., 378.
Shelley, 198, 321.
Similar ideas, 109.
Similarity, law of, 105.
Skeat, W. W., 194.
Social molecules, 398 ff.
Social psychology, 40.
Society for Psychical Research, 8.
Socius, 399.
Socrates, 317.
Socratic method, 299.
Solitary, the, 391.
Soul, 6, 7.
Souriau, Paul, 343.
Southey, 390.
Spencer, Herbert, 343.
Spinoza, 79, 368.
Spirit, 7, 8, 256.
Spiritual comfort, gravitation of behaviour, 206.
Spiritualism, 8.
Spurgeon, 309.
Stalker, Prof. James, 6.
"Stand-patters," 83.
Starbuck, 6.
"Stay-putters," 83.
Steven, Dr., 6.
Stevenson, R. L. , 68.
Stewart, Dugald, 37.
Stirling, Hutchison, 143, 343.
Stockton, Frank, 357.
Stout, G. F., 137, 302.
Sturt, Henry, 302.
Subjective and objective, 63; relation to *selfish* of, 132.
Subliminal, the, 89; activity in, 117 ff.
Sufficient reason, law of, 292.
Suggestion, 266 ff., 273; in education, 285; in literary art, 276.
Suppression of ideas, 97.
Syllogism, 293.
Synapses, 178.

Talleyrand, 14.
Tarde, Gabriel, 404.
Taylor, Frederick W., 41, 237.
Taylorism, 210.
T. B. M., 232.
Temperament, 149 ff.; and diet, 170; geographical zones of, 169; humorous classification of, 150; nervous classification of, 153 ff.; physical characteristics of, 159, 162, ff; possible modification of 168, 171, ff.; simplicity of, 163.
Temptation, 273 ff.; the psychology of, 279.
Terman, Lewis M., 196.
Terminal facilities, 240.
Theophrastus, 165.
Theorem, the, 318.
Things and entities, 47, 48.
"Things in themselves," 82.
Thinking, 294; definition of, 295; difficulty of, 289; pictorial, 143; the goal of, 316; without words, 192.
Thomas, P. Félix, 269.
Thomson, "The City of Dreadful Night," 74.
Thought, laws of, 146, 216, 290 ff., 312, 340, 415; summed up in laws of internal harmony, 297.

Thoughts, command of, 286; "on tick," 192; recruiting and dulling of, 301.
Thring, Edward, 371.
Titan within us, the, 96.
Titchener, E. B., 36, 139.
Trollope, Anthony, 355.
Twain, Mark, 286, 353; letters from, 202; psychology of, 203 ff.
Type, attempts to classify, 163.

"Unc," the, 92 ff.
Unconscious, the, 86, 93 ff.
Unconsciousness, 41.
Universal elements in humanity, 407.
Universals, 46.

Verne, Jules, 356.
Vocabularies, 196 ff.
Volition, parallelogram of, 259.
Vorstellung, 100.

Walker, Prof. Hugh, 166.
Warner, Dr., 241.
Watsonitis, 43.
Welver, 36.
Wellington, Duke of, 175.
Wells, H. G., 356.
Wertheimer, Dr. M., 27, 28.
Whatley, Archbishop, 276.
Will, as choice, 251; as daimon, 249; breaking the, 254; free?, 260 ff.; hypostatized, 248 ff.; sacrifice of, 258; strong and weak, 254, 256; the good, 255.
Wilson, Prof. 140.
Window-dressing, 346.
Wool-gathering, 363.
Word association, 191; applied to crime, 124; directed and free, 123; in vocabularies, 196.
Wordsworth, 335, 337.
Worlds, correspondence of the two, 132; inner and outer, 130, 134, 330.
World-building, 131, 140, 145.
Wundt, Wilhelm, 268–9, 418.

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